

Red Grade Trail Project

**A non-motorized comprehensive trail system at the
Red Grade Parcel (RGP)**

DOI-BLM-WY-P070-2016-0037-EA

Prepared by Rachel Woita, Outdoor Recreation Planner
Buffalo, WY
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The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.



Contents

1.	Introduction	5
1.1	Purpose of Proposed Action	6
1.2	Need for Proposed Action.....	6
1.3	Background	7
1.4	Scoping.....	7
1.5	Conformance with BLM Land Use Plan.....	8
1.6	Decision to be Made	9
1.7	Resources Not Present or Present but Not Affected	9
2.	Proposed Action and Alternatives	10
2.1	Alternative 1 - No Action, Deny ROW Crossing BLM's Red Grade Parcel (RGP)	10
2.2	Alternative 2 - Extensive Multi-use Trail System and Two Parking Areas through the RGP.....	10
2.2.1	Phased Development Approach	12
2.2.2	Trail Design Components (Common to Alternatives 2 and 3)	13
2.2.3	Trailhead/Parking Area Design.....	15
2.2.4	Operations, Monitoring, and Maintenance (Common to Alternatives 2 and 3)	16
2.2.5	Reclamation Plan (Common to Alternatives 2 and 3).....	17
2.3	Alternative 3 - Reduced Single-use Trail System and One Parking Area through the RGP (Preferred).....	17
2.3.1	Trail Design Components	19
2.3.2	Trailhead/Parking Area Design.....	19
2.3.3	Operations, Monitoring, and Maintenance	20
2.3.4	Reclamation Plan	20
2.4	Alternative 4 – Two-trail Combined-use System through the RGP	20
2.4.1	Trail Design Components	20
2.4.2	Operations, Monitoring, and Maintenance	20
2.4.3	Reclamation Plan	20
2.5	Alternatives Considered but Eliminated from Detailed Analysis.....	21
3.	Affected Environment.....	22

3.1	Soils/Ecological Site/Vegetation	22
3.2	Water Resources	23
3.3	Forestry, Fuels, and Sensitive Plant Species	23
3.4	Wildlife, Sensitive Wildlife Species, and Threatened/Endangered Species.....	24
3.5	Recreation Resources and Travel Management	25
3.6	Visual Resources	26
3.7	Cultural Resources	26
3.8	Livestock Grazing	27
3.9	Lands and Realty	27
4.	Environmental Effects.....	28
4.1	Direct and Indirect Effects of Implementation of the No Action Alternative	28
4.2	Direct and Indirect Effects of Implementation of Alternative 2	29
4.2.1	Effects of Alternative 2 on Soils/Ecological Site/Vegetation	29
4.2.2	Effects of Alternative 2 on Water Resources	31
4.2.3	Effects of Alternative 2 on Forestry, Fuels, and Sensitive Plant Species	31
4.2.4	Effects of Alternative 2 on Wildlife, Sensitive Wildlife Species, and Threatened/Endangered Species.....	32
4.2.5	Effects of Alternative 2 on Recreation Resources and Travel Management	32
4.2.6	Effects of Alternative 2 on Visual Resources	33
4.2.7	Effects of Alternative 2 on Cultural Resources	34
4.2.8	Effects of Alternative 2 on Livestock Grazing.....	34
4.2.9	Effects of Alternative 2 on Existing ROWs (or Authorized Uses)	35
4.2.10	Effects of Alternative 2 on Socioeconomics.....	36
4.3	Direct and Indirect Effects of Implementation of Alternative 3	36
4.3.1	Effects of Alternative 3 on Soils/Ecological Site/Vegetation	36
4.3.2	Effects of Alternative 3 on Water Resources	37
4.3.3	Effects of Alternative 3 on Forestry, Fuels, and Sensitive Plant Species	37
4.3.4	Effects of Alternative 3 on Wildlife, Sensitive Wildlife Species, and Threatened/Endangered Species.....	37
4.3.5	Effects of Alternative 3 on Recreation Resources and Travel Management	37

4.3.6	Effects of Alternative 3 on Visual Resources	37
4.3.7	Effects of Alternative 3 on Cultural Resources	37
4.3.8	Effects of Alternative 3 on Livestock Grazing.....	37
4.3.9	Effects of Alternative 3 on Existing ROWs (or Authorized Uses)	37
4.3.10	Effects of Alternative 3 on Socioeconomics.....	38
4.4	Direct and Indirect Effects of Implementation of Alternative 4	38
4.4.1	Effects of Alternative 4 on Soils/Ecological Site/Vegetation	38
4.4.2	Effects of Alternative 4 on Water Resources	38
4.4.3	Effects of Alternative 4 on Forestry, Fuels and Sensitive Plant Species	38
4.4.4	Effects of Alternative 4 on Wildlife, Sensitive Wildlife Species, and Threatened/Endangered Species.....	38
4.4.5	Effects of Alternative 4 on Recreation Resources and Travel Management	38
4.4.6	Effects of Alternative 4 on Visual Resources	39
4.4.7	Effects of Alternative 4 on Cultural Resources	39
4.4.8	Effects of Alternative 4 on Livestock Grazing.....	39
4.4.9	Effects of Alternative 4 on Existing ROWs (or Authorized Uses)	39
4.4.10	Effects of Alternative 4 on Socioeconomics.....	39
5.	Cumulative Effects	41
5.1	Cumulative Effects of Alternative 2	41
5.2	Cumulative Effects of Alternative 3	42
5.3	Cumulative Effects of Alternative 4	42
6.	Proposed Mitigation/Monitoring.....	42
7.	Tribes, Individuals, Organizations, and Agencies Consulted.....	46
8.	List of Preparers	47
9.	References	48
	Appendix A: Issue Resolution.....	52
	Appendix B: Summary of species habitat and project effects for the Red Grade Trail Project.....	63

1. Introduction

This environmental assessment (EA) analyzes potential impacts on resources from construction and use of a 10 foot wide non-motorized right-of-way (ROW) proposed by Sheridan County, in partnership with the Sheridan Community Land Trust (SCLT) (Alternatives 2 and 3) on Bureau of Land Management (BLM)-administered surface in Sheridan County, WY. BLM issued a draft EA in May 2015 analyzing the impacts from no action and SCLT's October 13, 2015 proposal. Those alternatives (1 and 2), a second alternative from SCLT (Alternative 3), and a third action alternative (Alternative 4) from an adjacent landowner comprise a reasonable range of alternatives for this EA.

The different alternatives (other than no action) propose construction of varying distances of trail and zero, one, or two trailheads/parking areas for multiple non-motorized uses including hiking, mountain biking, skiing, and snowshoeing across BLM-administered surface. This proposed ROW is part of a SCLT planned comprehensive non-motorized trail system also crossing State and Forest Service lands. The trail construction and use on State lands was permitted and commenced in late 2015. Figure 1 shows the project area.

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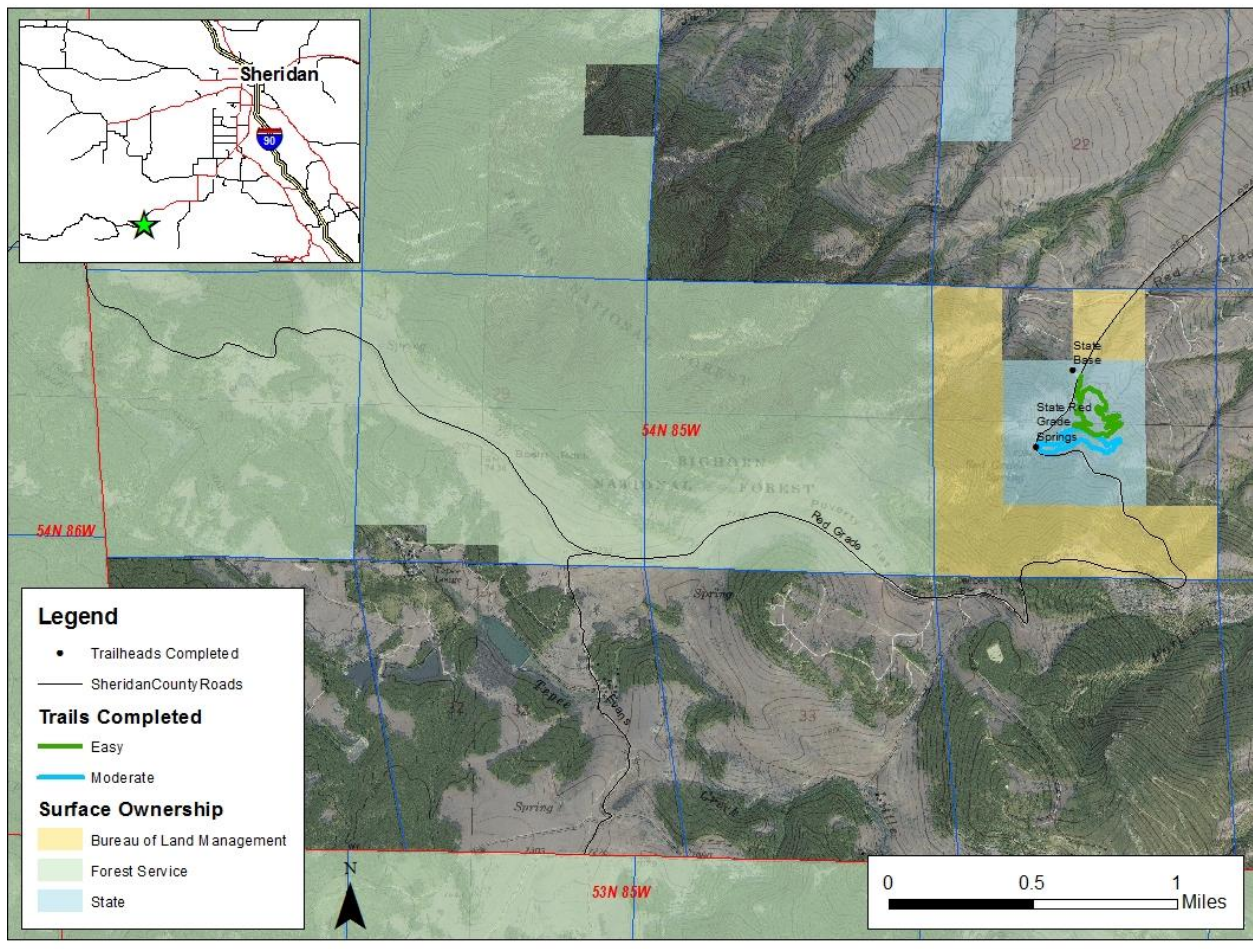
Case File No: WYW-168503, incorporated here by reference

Proposed Action Title/Type: ROW, Red Grade Trail Project (RGTP)

Location: 6th P.M., Sheridan County, Wyoming, T54N, R85W, Section 27, NWNE, W2W2, SESW, S2SE (BLM-administered surface)

Applicant: Sheridan County; under Memorandum of Understanding (MOU) with Sheridan Community Land Trust

Figure 1. Project Area



1.1 Purpose of Proposed Action

The proposed project's purpose is to increase safety and public access to BLM-administered surface. The purpose for SCLT, as the proponent, is to develop seamless non-motorized recreation opportunities from the State Lands at the bottom of Red Grade to the Bighorn National Forest at the top of the grade. The Bighorn National Forest will not complete the environmental review of the trail system on Forest lands this year; therefore, a secondary purpose for the trails on BLM-administered land is to allow for out and back trails or loop trails that are contained entirely on BLM-administered surface.

1.2 Need for Proposed Action

The BLM's need for the action is separation of motorized and non-motorized activities on Red Grade. Currently, trucks, ATVs, side by sides, motorcycles, cars, bikes, hikers, and horsemen all use the Red Grade Road, or user created trails, to cross BLM-administered lands. The colocation of motor vehicles and bicycles on Red Grade Road is placing cyclists in a dangerous situation. The construction of a trail system would encourage bicyclists and pedestrians to use the trails instead of the road. In addition to

improving safety, actions proposed in this EA would provide new and improved recreation opportunities within 30 minutes of downtown Sheridan and just a few minutes from the community of Big Horn. The project area is within biking distance of Sheridan, providing the unique opportunity to bike from town to trails.

There is a growing and documented desire from Sheridan County residents for non-motorized trails that offer opportunities for hikers, bikers, runners, skiers, and snowshoers of all abilities. This project has received support from the Sheridan mountain biking community. The recently opened Mosier Gulch to Grouse Mountain trail (near Buffalo), Soldier Ridge trail in Sheridan, and two miles of trails on Red Grade State land have consistent and increasing mountain bike use. Additionally, these non-motorized recreation opportunities would serve the interest and needs of regional recreationists and visitors traveling through the region and may become a destination for the recreating public.

The proposed ROW would support the management objective for the BLM Buffalo Field Office (BFO) recreation program and advance community-driven recreational planning efforts. The BLM's objective is to provide outdoor recreational opportunities on public lands while providing for resource protection, visitor services, and the general health and safety of public land visitors in a manner supporting local communities (BLM, 2015a). Approving the proposed ROW would assist the BFO in meeting these objectives.

1.3 Background

The SCLT sent a formal proposal for building the Red Grade Trail Project (RGTP) to the BFO and the USFS Tongue River Ranger District (TRRD) on October 30, 2014, and a revised proposal to the BFO on October 13, 2015. Buffalo BLM released a draft EA in May 2015 (BLM, 2015e) that included a no action alternative and SCLT's proposal. Based on comments received, the BLM and SCLT refined the original proposal (Alternative 2) into a third alternative (SCLT, 2016), and BLM accepted a proposal (Alternative 4) from an adjacent landowner (Rhinesmith, 2016).

The State of Wyoming has granted SCLT a Special Use Lease for a 25-year term for the State lands portion of the trail system. The SCLT proposals include maps of the proposed routes and types of use. SCLT has hosted several public open houses, issued press releases regarding the project, and made initial contact with adjacent landowners and authorized users in the project vicinity. Should the authorization be granted, Sheridan County would hold the ROW; SCLT and Sheridan County would manage the trail system per a Memorandum of Understanding.

1.4 Scoping

The BFO interdisciplinary team (ID team) conducted internal scoping by reviewing the proposal to identify potentially affected resources, land uses, resource issues, regulations, and site-specific circumstances. The ROW application, and associated plans and maps are part of the administrative record (AR), available for review at the BFO.

The BLM Draft EA public comment period was open from May 5, 2015 to June 5, 2015. The BLM received 325 written comments, and 268 (82.5%) of those support the project. Several comments expressed concerns over potential aesthetic, environmental, and human health and safety impacts of the trail and the resultant increase of use on public lands adjacent to their residences. These issues are analyzed for each alternative (see Sections 4.2.5, 4.2.6, 4.3.5, 4.3.6, 4.4.5, and 4.4.6). For a list of issues and how they were addressed, see Appendix A.

This project is similar in scope to the Mountain of the Rogue Trail System in the Rogue Valley, near the city of Rogue River, Oregon in that the Rogue River Trail System included a phased design of non-motorized, mountain bike and hiking trails near a population center. Before the completion of the Mountain of the Rogue Trail system, there were no mountain biking opportunities nearby (BLM, 2013). Public comments on the BLM Draft EA for the Red Grade Trails Project revealed similar concerns that will be addressed in this EA.

1.5 Conformance with BLM Land Use Plan

The proposed ROW conforms and tiers to the Record of Decision for the Buffalo Field Office Resource Management Plan (RMP) (BLM, 2015d).

The proposal conforms to the Bureau of Land Management Buffalo Field Office Approved RMP (2015a) because it is specifically provided for in the following RMP decisions:

Purpose

Establish goals and objectives (desired outcomes) for management of resources and resource uses within the approximately 780,000 surface acres...in the planning area administered by the BLM in accordance with the principles of multiple use and sustained yield. (p. 4)

From Table 3.22. 6000 Land Resources (LR) – Lands and Realty

Objective LR:2.1 - Develop and maintain a land-ownership pattern that improves access for public use, and improves management and protection of BLM-administered lands by:

1. Acquiring legal easements for BLM-administered lands for recreational opportunities and administrative use.
2. Responding to requests for land authorizations for access needs.
3. Responding to requests for land transfers.
4. Giving priority to land exchanges and/or sales on custodial grazing allotments while supporting other resource values. (p. 135)

Decision L&R-6006 - Avoid the potential of inadvertent trespass by people accessing public lands through the use of appropriate signage and access authorizations. (p. 135)

From Table 3.25. 6000 Land Resources (LR) – Travel and Transportation Management

Objective LR:5.4 - Provide for acceptable modes of legal public access that supports other resources, reduces conflicts, and provides for diverse recreation opportunities. (p. 140)

From Table 3.26. 6000 Land Resources (LR) – Recreation

Decision Rec-6004 - Provide general and interpretive information as well as information designed to prevent trespass to visitors of SRMAs [Special Recreation Management Areas] and other high-use recreation areas. (p. 143)

The proposed ROW conforms to the land use plan terms. This EA fulfills the 1969 National Environmental Policy Act (NEPA) requirement for site-specific analysis. The proposed ROW is in accordance with 43 CFR 1610.5-3(a), the Federal Land Policy and Management Act (FLPMA) of 1976.

1.6 Decision to be Made

The BLM will decide whether or not to authorize the proposed ROW (relating to BLM-administered surface only) or an alternative, and if so, under what terms and conditions in concert with the Bureau's multiple use mandate, environmental protection, and Resource Management Plan (RMP).

1.7 Resources Not Present or Present but Not Affected

An issue for purposes of NEPA analysis is an effect (or a perceived effect, risk, or hazard) on a physical, biological, social, or economic resource. BLM is directed by guidance, statute, and regulation to describe the environment of area(s) to be affected by the alternatives under consideration. As an example, CEQ regulations direct BLM to concentrate efforts on important issues, especially the presence or absence of relevant issues. The identified important issues guide the formulation of the alternatives. The discussion of environmental impacts is therefore restricted to topics related to resources which are relevant to the decision. This EA will not discuss resources and land uses that are not present, that are present but unlikely to receive material effects, or that the BFO RMP (BLM, 2015a) or other analyses adequately addressed.

The proposed action is not expected to have any effect on air quality. Construction would be completed largely by hand tools, manual labor, and small machines, which would greatly reduce the total surface disturbance and the amount of dust generated by the project.

There are no active or pending mining claims located in, or active or inactive oil/gas, coal, or geothermal energy leases within, the Red Grade Parcel (RGP) in T54N, R85W, Section 27 (BLM, 2015b, c). In addition, there are no known active or abandoned mines or exploration sites in the RGP (BLM, 2015b, c). The project area has little to no development potential for oil/gas, coal, geothermal energy, or any other minerals due to the rock types and geological structures present, as well as the remoteness of the area (Shafer, 2009). There would be no effect on mineral resource development. There are no leases or claims in the project area, and the proposed action does not preclude future leasing.

The project area lacks wilderness characteristics as the BLM-administered parcel is of insufficient size with a mechanically constructed and maintained road, and does not meet any exception criteria. The adjacent Bighorn National Forest allows for road construction (USFS, 2005, Volume 2-maps, p. 215),

Thus, air quality, mineral resources, and lands with wilderness characteristics will not be discussed further in this EA.

2. Proposed Action and Alternatives

2.1 Alternative 1 - No Action, Deny ROW Crossing BLM's Red Grade Parcel (RGP)

Description of the No Action Alternative: This alternative, if selected, would deny the proposed ROW. A non-motorized trail would not be built across lands administered by the BLM. The RGP would remain as it is presently (Figure 1), isolated from developed recreational opportunities, and there would continue to be a lack of mountain bike opportunities in the county.

Denial of a ROW for trail construction would preclude development on BLM-administered surface. Under this scenario, the constructed trails on State of Wyoming lands would not connect to USFS trails, except by use of Red Grade Road. Non-motorized recreationists would still be able to cross the BLM-administered surface cross-country, on user created routes or Red Grade Road and reconnect with the existing trail system on the Forest. Cyclists would remain on Red Grade Road.

Without proper signage, conflicts among different user types would continue, and there would be no information about etiquette and outdoor ethics; trash and human waste would likely continue to accumulate in parking lots and on the user-created trails. Safety concerns would continue among different user groups and as users would continue to hike and/or bike on Red Grade Road rather than on established trails.

The no action alternative received analysis in the 2015 Buffalo Resource Management Plan (RMP) Final Environmental Impact Statement (FEIS); see summary, Record of Decision for the Approved Buffalo (RMP) (BLM, 2015d). This description is incorporated here by reference. Therefore, the descriptions of Alternative 1, the no action alternative, will receive no further discussion.

2.2 Alternative 2 - Extensive Multi-use Trail System and Two Parking Areas through the RGP

Description of Alternative 2: This alternative was analyzed in the 2015 BLM Draft Red Grade Trails EA (WY-070-EA15-32). Analysis here includes additional issues identified in the 2015 BLM Draft EA public comment period. If selected, Alternative 2 would grant a ROW across BLM-administered surface to

Sheridan County, in partnership with the SCLT. This ROW would allow for the construction and maintenance of two trailheads/parking areas and a non-motorized trail system crossing the RGP.

As designed, the comprehensive trail system would be located across multiple jurisdictions including lands administered by the BLM, USFS, and the State of Wyoming (Figure 2; Table 1; SCLT, 2014). The portion on BLM-administered land includes two trailheads/parking areas and approximately 6.49 miles of multi-use trails. The entire trail system includes seven trailheads/parking areas and approximately 34.06 miles of trails. The entire geographic scope of the trail system encompasses approximately 1,400 acres.

Figure 2. Layout of proposed Red Grade Trail System for Alternative 2

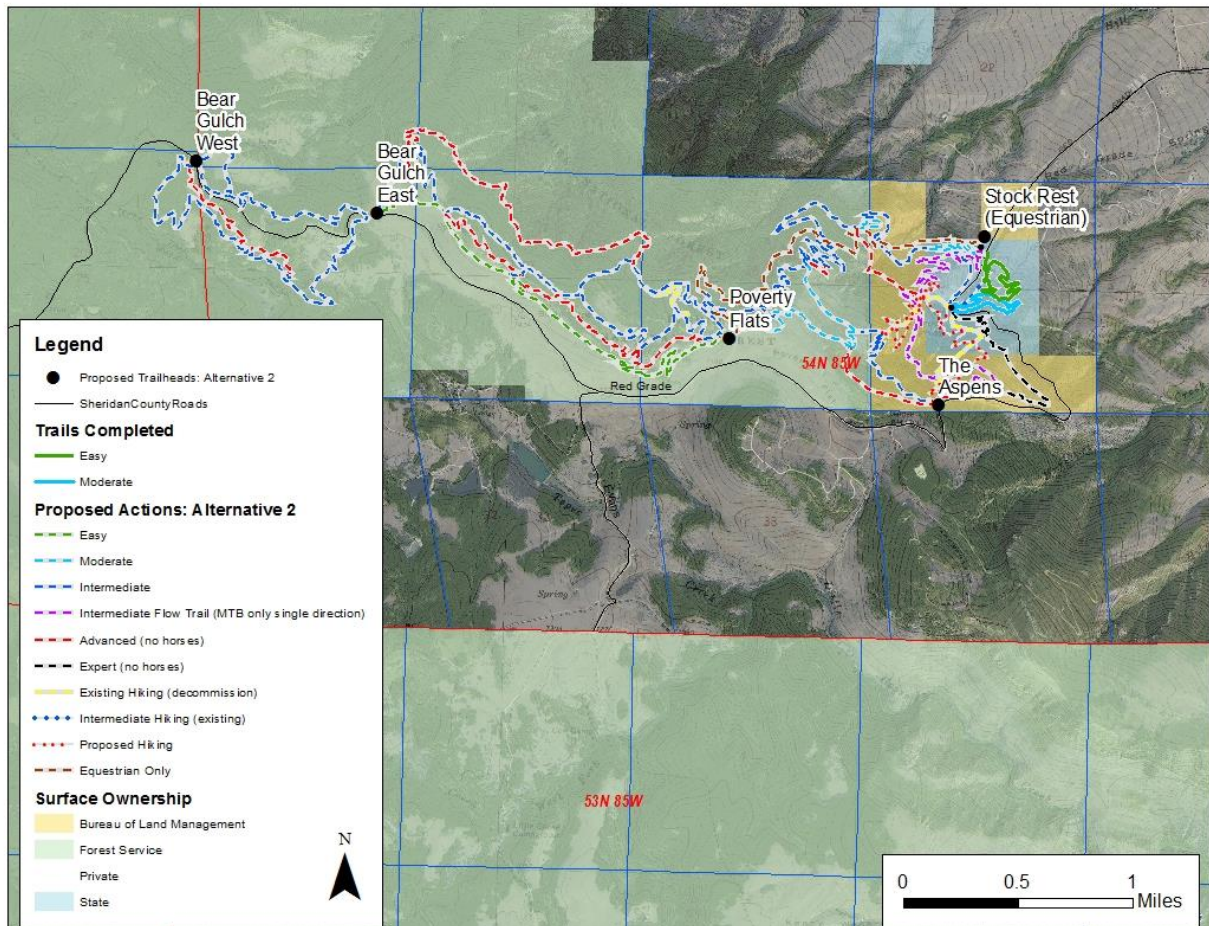


Table 1. Proposed trail system components by surface management agency for Alternative 2

Surface Management Agency	Parking Lots/Trailheads/Access Road (Acres)	Trails (Miles)	Estimated Acres of Disturbance Assuming Maximum 48" Corridor around Trails*	Total Estimated Acres of Disturbance
BLM	Aspens – 0.2 Stock Rest – 1.9	6.49	3.15	5.25
State of Wyoming	Lower – 0.5 Springs – 0.15	5.38	2.61	3.26
USFS	Poverty Flats – 0.5 Bear Gulch East – 0.16 Bear Gulch West – 0.09	22.23	10.78	11.53

*Trails would be constructed 18-24 inches wide, with a maximum of 48 inches (certain short portions at switchbacks and climbing turns).

2.2.1 Phased Development Approach

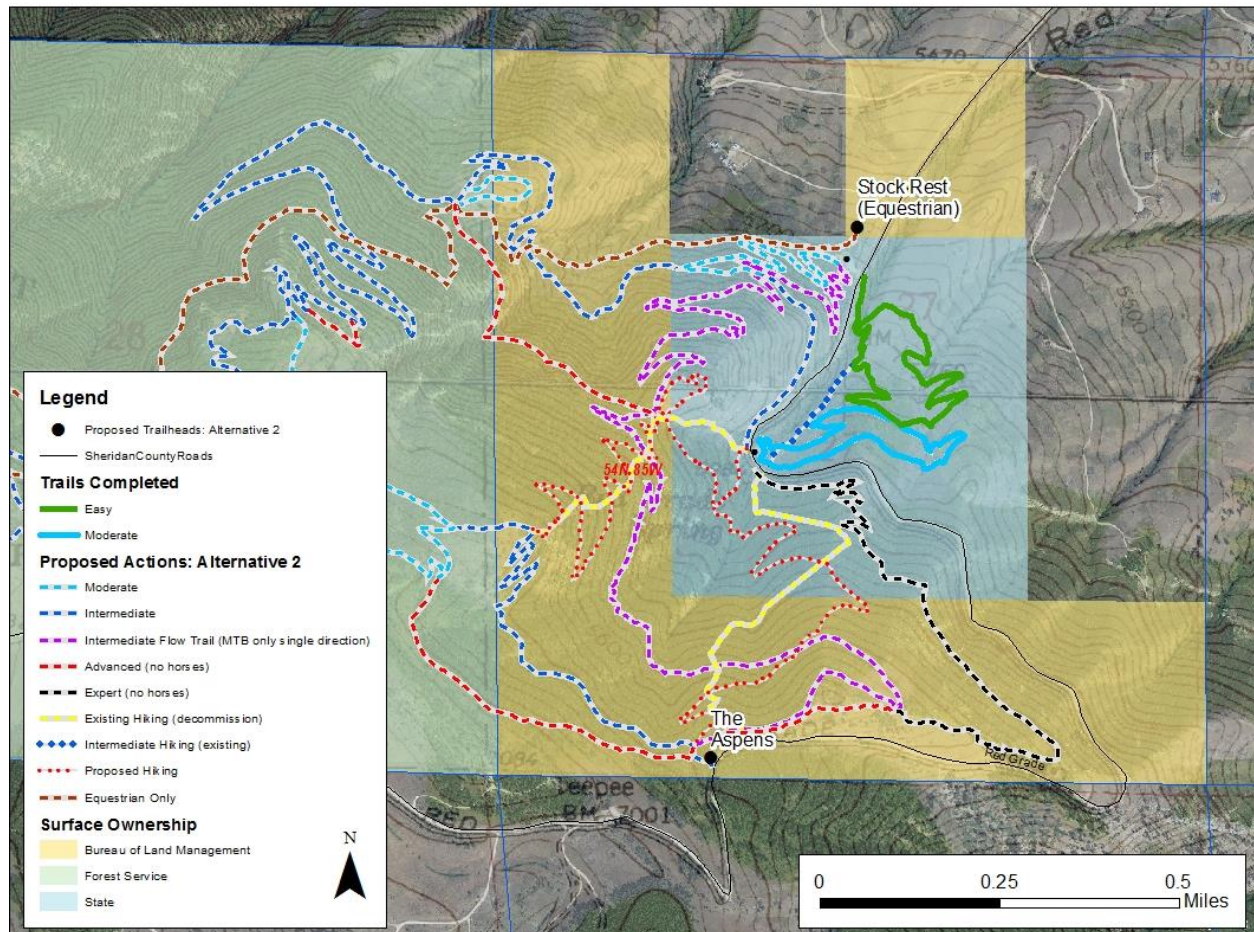
The project would involve a phased development approach. Trail construction would be expected to last six to twelve weeks each summer, with phased development over several years (SCLT, 2014).

Timeframes would generally be dependent on acquisition of funding for materials and availability of volunteer labor.

SCLT began construction on Phase I (located on State of Wyoming lands) during summer of 2015. Phase I developed approximately 1.77 miles of new trail and improved the two existing parking lots on State surface. Construction of Phase II, analyzed in this EA, would largely focus on expanding the trail system onto BLM-administered surface, and would be tentatively scheduled to take place over six to eight weeks during the late summer or early fall, depending on BLM authorization and acquisition of grant funding. Phase II would construct approximately 4.95 miles of trails on BLM-administered surface and would include construction of the Aspens Trailhead/Parking Area.

Phase III would include constructing trails on both BLM and USFS land. The first part of Phase III would include the completion of the remaining approximately 1.54 miles of trail on BLM-administered surface, focused mostly in the northern portion of the BLM parcel, as well as construction of the Stock Rest Trailhead/Parking Area (Figure 3). The second part of Phase III, which would be analyzed in a separate NEPA analysis, would also include trail system expansion onto the Bighorn National Forest and construction of three parking areas (Poverty Flats, Bear Gulch East, and West) on USFS-administered land. The timeline associated with Phase III development is contingent on funding, and if approved, would begin after the Forest Service has completed a NEPA analysis and made a decision. Phases IV-V, analyzed in a separate NEPA document, would include completing construction of all proposed trails on the Bighorn National Forest. All construction on BLM-administered surface would be completed within

Figure 3. Layout of proposed RGTP Trail System by trail type for Alternative 2



2.2.2 Trail Design Components (Common to Alternatives 2 and 3)

Approval of the proposed action would grant a 10-foot wide ROW for the construction and maintenance of non-motorized trails on BLM-administered surface in portions of T54N, R85W, Section 27, NWNE, W2W2, SESW, S2SE. In total, the SCLT would build approximately 6.49 (Alternative 2) or 3.84 (Alternative 3) miles of new trail, resulting in about 3.15 (Alternative 2) or 2.02 (Alternative 3) acres of surface disturbance for trail construction on BLM-administered surface.

Within the proposed project area, there are several existing social trails that have been developed by repeated use. Natural barriers would be placed to dissuade use on these unsustainable trails, and where

possible, these trails would either be incorporated into the new trail system or would be rehabilitated to natural conditions.

SCLT hired a consultant working for the International Mountain Biking Association (IMBA) to design a comprehensive trail system using the “hub-and-spoke” concept where users access the system at one of seven trailheads (hubs) and can select from multiple routes (spokes) that require varying levels of skill to reach the next trailhead. The trail system was also designed to prevent conflicting recreational uses (e.g., downhill mountain biking and hiking) on a given trail, while accommodating multiple uses on the overall system. Thus, some of the trails within the system are designed for specific activities (hiking, biking, or equestrian use) or as single-direction flow trails. The grantee would be responsible for educating the public on shared-use concepts through signs and maps of the completed trail system.

SCLT proposes to build trails to IMBA and the USFS construction standards (Hesselbarth et al., 2007). The approved ROW would allow for construction of trails for various abilities with tread ranging from approximately 18-24 inches wide with natural surface trail for non-motorized use. (The tread is the actual surface of the trail that accommodates pedestrian, horse, or bicycle travel.) Certain short portions of trail tread, including switchbacks and climbing turns, could be approximately 48 inches wide, with additional surface disturbance to construct landing platforms and an appropriate turning radius. The average grade of the trail is planned to be approximately 8%, and the maximum grade would not exceed 15%. Predominant uses of the trails would be hiking and mountain biking; however, horseback riding would be accommodated on certain shared-use trails.

The trails would incorporate drainage design features to divert any surface water and avoid puddling or channeling runoff. Drainage designs include frequent grade reversals and outslowing of the entire tread toward the downhill edge to encourage any surface water to drain across and off the trail, rather than down the length of the trail. An outslowed tread is one that is lower on the downhill or outside edge of the trail than it is on the uphill or inside edge. Trail tread outslows would be approximately 5% (measured from uphill edge of tread to downhill edge of tread). SCLT’s additional drainage control features include rolling grade dips and water bars to ensure that water can exit the tread in frequent locations along the trail.

The trails would employ a rolling contour design to gradually traverse hills or side slopes. Trails would generally be constructed using full-bench construction by cutting the full width of the tread into the hillside and casting the excavated soil away from the trail. This form of construction is recommended in the USFS Trail Construction and Maintenance Notebook (Hesselbarth et al., 2007). Switchbacks and climbing turns may employ a cut-and-fill method or short stretches of natural rock or log retaining walls to achieve a level turning platform. SCLT proposes to construct climbing turns on side slopes of <7% and rolling-crown switchbacks or switchberms on steeper side slopes (IMBA, 2004).

The back slope is the excavated, exposed area above the tread surface. The constructed back slope would approximately match the ratio of vertical rise to horizontal distance (i.e., rise to run) of the natural side slope. Back slopes would be constructed no steeper than 2(h):1(v).

Spoil material, including dirt and duff loosed during trail construction, would be spread away from surface drainages or any preferential water flow pathways, and scattered to blend in with the surrounding topography. Spoil material would be spread in a manner that does not bury existing vegetation. Pesticides may be used to prevent the spread of noxious weeds and would be authorized in a subsequent Pesticide Use Permit. Vegetation that is removed in trail construction or maintenance would be lopped to the ground and scattered to less than 18 inches high and farther than 24 inches from the trail edge.

In addition, the constructed routes would be classified as “trails” per BLM Manual 1626, which defines a trail as “a linear route managed for human-powered, stock, or off-road vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles” (BLM, 2011a, Glossary p. 2). These trails would be closed to motorized use per 43 CFR 8341.1 and 8342.1.

The trails would be open year-round for non-motorized use, though it is expected that use would be heavier during spring and fall when temperatures are more moderate. Trail use would be discouraged during extremely wet conditions to prevent degradation of the trails.

2.2.3 Trailhead/Parking Area Design

The ROW application also includes the development of two trailheads/parking areas with improved access roads and parking lots on BLM-administered surface. Construction designs for the parking lots adopted Wyoming Department of Transportation (WYDOT) Standard Specification for Road and Bridge Construction (WYDOT, 2010). The final engineered construction design would employ Best Management Practices (BMPs) suggested by BLM and would be reviewed for compliance prior to issuing a ROW.

The parking area known as “The Aspens” would be located in the SESW of Section 27 in T54N, R85W (on the northwest side of Red Grade Road) and is part of one of the initial phases of trail system development. This parking lot would be designed to accommodate 6-10 vehicles. Construction of the parking lot would require removal of approximately 10-15 conifer trees and would include grading and placing gravel on approximately 0.2 acre. The parking area perimeter would be lined with boulders brought in from off-site to constrain parking to within the developed parking areas. In clearing the vegetation, WYDOT standard specifications for clearing and grubbing would be followed, which specifies that refuse and debris (slash) would not be burned, but be removed from the area entirely, or incorporated into construction design such as fences or water bars (WYDOT, 2010).

A second parking lot on BLM-administered surface is planned in a later phase of trail system development on the Red Grade Stock Drive. The Stock Rest Trailhead/Parking Area would be designed according to USFS Equestrian Design Guidebook for Trails, Trailheads & Campgrounds (USFS, 2007) and would accommodate parking for approximately six vehicles with trailers. The trailhead would include parking spaces, a turn-around, hitching post, signs, gates, and other features to provide safe equestrian access to the trail system. Gates would be approximately 48 inches wide to allow equestrian access while preventing unauthorized OHV use of the trail system. Construction of the parking lot and access road would include grading and placing gravel on a maximum area of disturbance of 1.9 acres; the actual area of disturbance is expected to be less than 1 acre. Surface disturbance would be associated with grading the parking pad to create a flat parking surface, installing culverts and other drainage control features, and constructing a ~200 foot access road.

The trailhead would be enclosed with wildlife-friendly fencing to exclude livestock from the trailhead area and to prevent inadvertent trespass and surface disturbance caused by indiscriminate parking. The existing fence line is not located on the actual land ownership boundary, and a cadastral survey has been scheduled to ensure that the approved action does not encroach onto adjacent private surface. The final design schematic would include an engineered cut-and-fill diagram and clearly delineate the fenced perimeter of the trailhead on BLM-administered surface. The BLM would review and approve final design prior to issuing a ROW.

SCLT would be responsible for the maintenance of the trail system and parking areas. Additional information is included in the Reclamation Details and Maintenance Activities Plan (SCLT, 2014), which states that initially there would be weekly maintenance activities, then annually for the duration of the trail system.

Signage, as well as physical narrowing, would be employed based on similar trail systems to discourage illegal motorized entry to the trails.

2.2.4 Operations, Monitoring, and Maintenance (Common to Alternatives 2 and 3)

No temporary work areas on BLM-administered surface outside of the ROW are necessary for construction; however, topsoil may be stored on BLM-administered surface adjacent to the trailheads/parking areas for approximately three weeks during construction periods.

SCLT has hired a Trails Manager to specifically oversee community engagement, safety, and a maintenance plan for the Red Grade Trails Project. Annual maintenance is anticipated for the duration of the existence of the trail and trailhead/parking area infrastructure. Weekly monitoring would ensure that the corridors, treadways, and structures are clean, safe, and free of hazards and damage. Routine maintenance would include general debris and trash removal, trail maintenance, clearing of hazards, clearing of drainage systems, monitoring of erosion, removal of vegetation, and other tasks as needed. The Trails Manager would be in charge of mediating user conflicts concerning the trail. This includes

being responsive to adjacent landowners. The Trails Manager would also be responsible for weekly check-ins to any on-trail registers to monitor use levels and for the purpose of maintaining an effective and responsive public feedback system and promote community participation. Law violations would be reported to authorities immediately.

2.2.5 Reclamation Plan (Common to Alternatives 2 and 3)

SCLT submitted a Reclamation Plan as part of the ROW application process (SCLT, 2014). At the time of abandonment, relinquishment, or termination of the ROW, Sheridan County would return any disturbed areas to pre-existing or natural conditions. Reclamation of trails would involve the use of hand labor to redistribute any topsoil removed during initial trail construction. At final reclamation, the area where the trail previously existed should blend with the natural environment and not attract the attention of the casual observer. A BLM-approved seed mixture and/or tree plantings may follow the redistribution and hand grading of soil material. All signs along the trail would be removed.

Reclamation of the Stock Rest (Alternative 2) and Aspens trailheads/parking areas and access roads would include removal of all infrastructure or above-ground structures including signs, new fencing, cattle guards, any placed boulders, and drainage structures. The stock rest perimeter fence would be restored to pre-existing conditions, retaining the boundary line portion of the fence, but removing any unneeded new fencing around the trailhead/parking area to ensure continued use for livestock operations. In addition, any aggregate, non-native materials would be removed from the sites, disturbed areas would be recontoured, topsoil would be augmented, and BLM-approved seeding/planting mix would be applied.

At the time of abandonment by Sheridan County, if the parking areas have become routinely used for other types of public recreation (e.g., ORV parking, snowmobile parking, etc.), the BLM may coordinate with another party to retain certain infrastructure.

2.3 Alternative 3 - Reduced Single-use Trail System and One Parking Area through the RGP (Preferred)

Description of Alternative 3: This alternative, if selected, would grant a 10' ROW across BLM-administered surface to Sheridan County, in partnership with the SCLT. This ROW would allow for the construction and maintenance of one trailhead/parking area and a non-motorized trail system crossing the RGP.

Following the initial draft EA for this project, several members of the community raised concerns about the trail system, and their comments were taken into consideration to develop this third alternative with reduced trails and infrastructure. Revisions were made to the original proposal to reduce the length and number of trails and infrastructure on BLM-administered land (Figure 4). This reduced trail system is similar to Alternative 2, but removes the black diamond downhill bicycle-only portion of the trail system and the Stock Rest Trailhead/Parking Area from the proposal.

Figure 4. Layout of proposed RGTP Trail System by trail type for Alternative 3

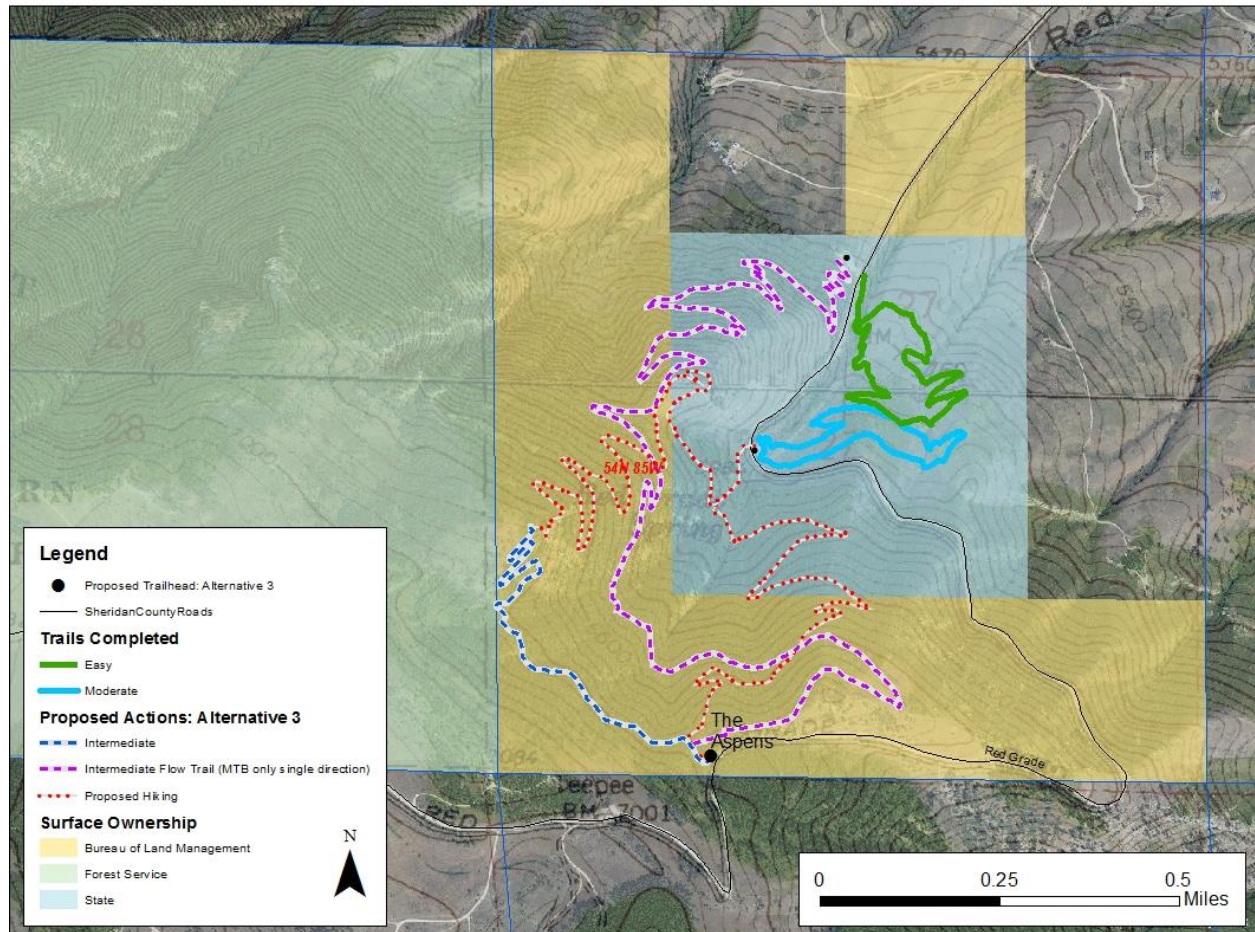


Table 2 shows the comprehensive trail system that would be located across multiple jurisdictions including lands administered by the BLM, USFS, and the State of Wyoming (SCLT, 2015). The portion on BLM-administered land includes one trailhead/parking area and approximately 3.84 miles of trails. Under this proposal, total disturbed area from construction (trails – 4.65 acres and trailhead/parking area – 0.16 acre) would equal 4.81 acres, or roughly .02% of the 280-acre BLM-administered parcel.

Table 2. Proposed trail system components by surface management agency for Alternative 3

Surface Management Agency	Parking Lots/Trailheads/Access Road (Acres)	Trails (Miles)	Estimated Acres of Disturbance Assuming Maximum 48" Corridor around Trails*	Total Estimated Acres of Disturbance
BLM	Aspens – 0.16	3.84	1.86	2.02
State of Wyoming	Lower – 0.5 Springs – 0.15	5.38	2.61	3.26
USFS	Poverty Flats – 0.5 Bear Gulch East – 0.16 Bear Gulch West – 0.09	22.23	10.78	11.53

*Trails would be constructed 18-24 inches wide, with a maximum of 48 inches (certain short portions at switchbacks and climbing turns).

In order to promote safety, trails would be separated by use. A map of the area, designating trail uses and difficulty levels would be posted at the Aspens Trailhead/Parking Area. Additionally, there would be a kiosk with signage detailing trail etiquette, Pack It In Pack It Out information, Leave No Trace and Tread Lightly principles, and rules for pets (must be leashed, pack out pet waste). Camping and fires would be prohibited in the parking area, and shooting would be prohibited from the parking area, trails, and across trails. Fireworks would also be prohibited. SCLT has been in contact with local emergency agencies to include these entities in developing an on-going emergency management plan to coincide with trail and trailhead development, and is currently working in partnership with local law enforcement agencies to draft a State Land Board Order for 2016, which would give the necessary authority to law enforcement officers to address the majority of issues of concern in the Red Grade vicinity.

Timeframes would generally be dependent on acquisition of funding for materials and availability of volunteer labor.

2.3.1 Trail Design Components

Trail design components would be the same as for Alternative 2 (see Section 2.2.2), except for miles of trails built and acres of disturbance. In this alternative, the SCLT would build approximately 3.84 miles of new trail resulting in about 1.86 acres of surface disturbance for trail construction on BLM-administered surface.

2.3.2 Trailhead/Parking Area Design

Under Alternative 3, there would be one trailhead/parking area. This area, “The Aspens,” would be developed on BLM-administered land along the southern boundary of the project area. The area design is described above in section 2.2.3.

2.3.3 Operations, Monitoring, and Maintenance

See section 2.2.4.

2.3.4 Reclamation Plan

See section 2.2.5.

2.4 Alternative 4 – Two-trail Combined-use System through the RGP

Description of Alternative 4: A fourth alternative was submitted by a community member (Rhinesmith, 2016). This alternative, if selected, would allow for the construction and maintenance of a two-trail non-motorized system crossing the RGP. These two trails would be approximately 1.89 miles. One of the trails would be multi-use with the restriction that mountain bikers go in the uphill direction only, and the other trail mountain biking in the downhill direction only. This alternative would be a subset of Alternative 3, and would require a detailed survey and route selection with the possibility of making route changes to ensure the multi-user trails, including uphill mountain biking, have a reasonable slope. This alternative does not include any new parking areas on BLM-administered land, requiring users to access the trails via the State parcel, from the Base Trailhead or the Springs Trailhead.

This alternative minimizes the disturbance footprint and fragmentation (Figure 5).

2.4.1 Trail Design Components

Trail design components would need to be planned, but would follow similar concepts as Alternatives 2-3.

2.4.2 Operations, Monitoring, and Maintenance

An operations, monitoring, and maintenance plan was not submitted and would need to be developed.

2.4.3 Reclamation Plan

A reclamation plan was not submitted and would need to be developed.

Figure 5. Layout of proposed RGTP Trail System by trail type for Alternative 4

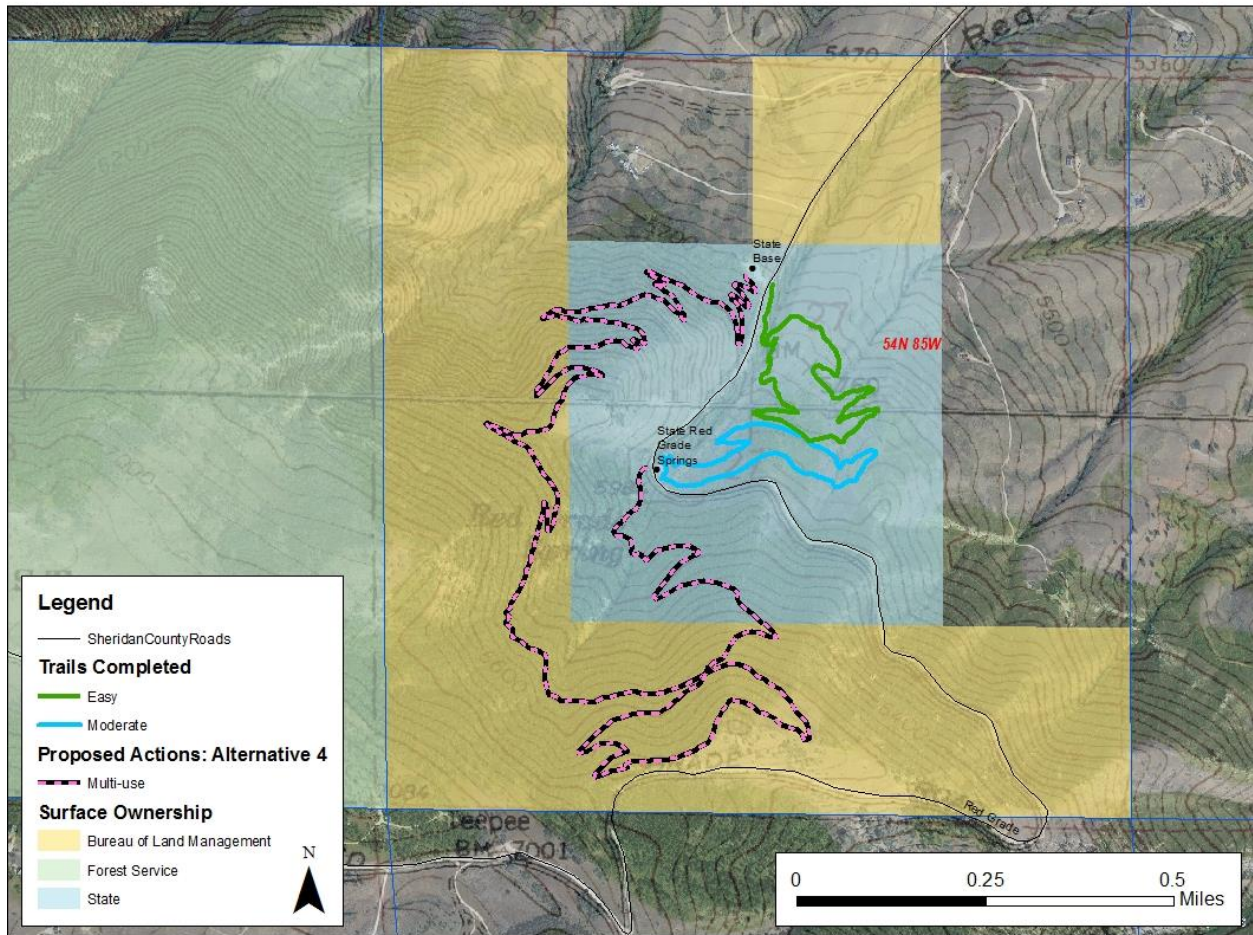


Table 3. Proposed trail system components for Alternative 4

Surface Management Agency	Parking Lots/Trailheads/Access Road (Acres)	Trails (Miles)	Estimated Acres of Disturbance Assuming Maximum 48" Corridor around Trails*
BLM	N/A	1.89	0.92

*Trails would be constructed 18-24 inches wide, with a maximum of 48 inches (certain short portions at switchbacks and climbing turns).

2.5 Alternatives Considered but Eliminated from Detailed Analysis

One suggested alternative was to prohibit mountain biking on proposed trails. This action would not be in conformance with the RMP (BLM, 2015d), and was not considered due to the lack of mountain biking trails within the area and the existing dangerous use of Red Grade Road for mountain biking. This alternative would not meet the need for segregating cyclists and motor vehicles.

Another alternative was to develop a different area for these trails, either in the scoria hills east of Sheridan or the Antelope Butte Ski Area. The Red Grade Trails were proposed due to location, close to Sheridan, and the opportunity for non-motorized recreation from the State Parking areas at the bottom of Red Grade through the BLM and National Forest.

3. Affected Environment

The project area is located approximately 8 miles west of the town of Big Horn, Wyoming. The entire proposed trail system includes portions of T54 N, R85W, Sections 19, 20, 27, 28, 29, and 30, and T54N, R86W, Section 25. The project area is predominately located on the north shoulder of Red Grade Road, and on the eastern slope of the Big Horn Mountains, on the parcel identified herein as the Red Grade Parcel (RGP). BLM-administered surface is limited to approximately 280 acres in portions of T54N, R85W, Section 27, and is located between lands managed by the State of Wyoming and lands managed by the USFS. The eastern end of the ROW would link to an existing staging area and parking lot on State of Wyoming lands.

3.1 Soils/Ecological Site/Vegetation

The Red Grade project area was inventoried in two soil surveys: Sheridan County (WY633), inventoried by the Natural Resources Conservation Service (NRCS), and the Soil Survey of Bighorn National Forest, Wyoming parts of Big Horn, Johnson, Sheridan, and Washakie counties (WY650), inventoried by the Forest Service (NRCS, 2015a). Dominant soil map units impacted by the proposal in the Sheridan County soil survey include map unit symbols 125, 100, 286, and 184. Dominant soils impacted by the project area within the Bighorn National Forest boundary include map unit symbols 27, 29, 15, 40, and 25. For complete map unit descriptions, properties, and predictions of soil behavior for selected land uses, see the above published soil surveys.

Current Conditions: The map units are on mountain slopes, ridges, hill crests, and dip slopes. Soils in the Red Grade project area typically range from shallow (<20”) to moderately deep (20-40”) to bedrock and well drained, with coarse fragments ranging in size from channers to cobbles, with surface textures dominantly loams and sandy loams. Slope ranges identified in the soil mapping units were described as steep, with the dominant map unit ranging from 10-75%. The existing slopes, soil surface textures, and shallow depth to bedrock are important properties to be addressed in the project design features and proposed mitigation measures.

The precipitation zones range from 15-19 inch precipitation zone in the lower sections to greater than 30 inches at the higher elevations along the west boundary of the project area. The ecological sites present include the loamy 15-19 inch precipitation zone, shallow loamy 15-19 inch precipitation zone, coarse upland 15-19 inch precipitation zone, and woodland sites (NRCS, 2015b). The predominant vegetation types in the project area include conifer trees and an understory of grasses and open

grassland /shrubland parks; higher elevation areas have a denser canopy of conifer trees and shrubs, with forbs and grasses occupying the understory. The dominant plant community is Douglas-fir, Engelmann spruce, ponderosa pine, and limber pine, depending upon slope, aspect, and elevation. The understory consists of Saskatoon serviceberry, Oregon grape, common juniper, heartleaf arnica, and bedstraw. The dominant grassland sites and understory include Idaho fescue, western wheatgrass, spike fescue, bluebunch wheatgrass, Columbia and green needlegrasses, and arrowleaf balsamroot. At the lower elevations of the proposed project area, the plant community is dominated by mixed grasses and forbs, along with a shrub component of Wyoming big sagebrush and shrubby cinquefoil. Grass species in this community include Columbia needlegrass, prairie junegrass, Sandberg and Kentucky bluegrass, and needleandthread. Forbs include pussytoes, prairie chickweed, and asters. As ecological conditions deteriorate, less desirable grasses, unpalatable forbs, and woody shrubs increase.

3.2 Water Resources

There are no significant lakes, ponds, riparian, or wetland areas on the BLM-administered surface within the project area (USFWS, 2010). One freshwater emergent wetland totaling less than 0.1 acre is present on the State of Wyoming parcel and does appear to be located near a planned trail. Approximately nine freshwater emergent wetlands and one pond (ranging from <0.1 acre to 8.8 acres) are within 0.25 mile of the proposed trail system on USFS surface, but are not intersected by proposed trail routes. The headwaters of Hill Creek, a perennial stream, and two intermittent unnamed streams are located on BLM-administered surface. The trail system is also upslope of several other perennial streams including Little Rapid, Jackson, Hanna, White, Hurlbert, and Little Goose Creeks.

At lower elevations, particularly near the State of Wyoming trails and the proposed Stock Rest Trailhead/Parking Area (Alternative 2), there are water rights listed by the Wyoming State Engineer for several springs, domestic/stock water wells, and irrigation ditches including Red Grade Spring Draw and the Woods and Hays Irrigation Ditches. Wood ditch is the only permitted water facility on the BLM-administered surface.

3.3 Forestry, Fuels, and Sensitive Plant Species

The majority of the project area is located in mixed conifer forests with an understory of common juniper, grasses, and forbs. Steep terrain in the project area and lack of road access limits the quantity of commercial forest product such that the most value is via local firewood sales.

Limber pine (*Pinus flexilis*) is a slow growing, long-lived 5-needle pine that tolerates cold, drought, and poor soils. In this area it commonly occurs on rocky substrates in mixed conifer stands with Douglas-fir and ponderosa pine. The species is vulnerable to bark beetles and white pine blister rust, an introduced disease. Due to widespread decline of limber pine across the western United States, the BLM has listed the pine as a sensitive species. In the project area limber pine is common, especially on open ridges but there is extensive decline which contributes to poor forest health and fuels concentrations, especially where common juniper is contiguous or at high foliar cover.

Another BLM-listed sensitive plant species that may be present is William's wafer parsnip (*Cymopterus williamsii*). This species grows on open ridge tops and upper slopes with exposed limestone outcrops or rockslides at elevations of 6000-8300 feet, and is usually prolific where present. The project area has not been surveyed for William's wafer parsnip; however, its presence is unlikely given the heavy tree cover and lack of exposed limestone over much of the project area.

Mountain lady's slipper (*Cypripedium montanum*) has been observed near the project area, along Red Grade Road. This species is found in shady forests and meadows at elevations from 4500-6900 feet, and occurs with conifers, birch, and aspen in areas of thick duff and ground cover (Vance, 2007). Mountain lady's slipper is listed by the USFS Rocky Mountain Region as sensitive, but is not listed as a BLM Wyoming sensitive plant species. The most recent surveys for this species occurred in 2004 and found approximately 150 flowering plants in a 5 acre area of BLM land, or approximately 30 plants per acre (WYNDD, 2016). Parts of this identified population overlap the proposed Aspens Trailhead/Parking Area and a short section of proposed trail, but much of the area is on the east side of Red Grade Road, which would not be affected by the proposed alternatives.

The 2004 and 2009 update of the Sheridan County Community Wildfire Protection Plan (Sheridan County, 2009) discusses the project vicinity, indicating the concentrations of summer homes and the high risk of wildfire due to heavy fuels in the conifer forests. The Little Goose Fire of August 2007 burned a total of 4,742 acres and threatened private structures in the vicinity, and within the project area ~170 acres of forested lands managed by the State and BLM were burned. The burned area has regrown with grasses, forbs, and deciduous shrubs. Since the 2007 wildfire, the BLM and USFS have created shaded fuel breaks in unburned sites on federal lands near private structures.

3.4 Wildlife, Sensitive Wildlife Species, and Threatened/Endangered Species

There are no threatened or endangered wildlife species in the project area. The project area contains a mosaic of mountain grassland and shrubland, conifer forest, and non-vegetated habitats supporting a diversity of terrestrial wildlife species. Mule deer (*Odocoileus hemionus*), white-tail deer (*Odocoileus virginianus*), elk (*Cervus elaphus*), and moose (*Alces alces*) are the most common big game species within the project area. White-tail deer are present yearlong. Mule deer and elk use all habitats within the project area, but are most abundant during the late fall and winter on open slopes. Pronghorn may also use the area intermittently.

The area provides habitat for a wide variety of mammalian species including mountain lion, coyote, black bear, badger, bats, and mink as well as foraging and nesting habitat for a multitude of migratory and non-migratory birds (e.g., passerines, raptors, etc.). Common birds of prey include golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*).

Northern Goshawk (*Accipiter gentilis*) nesting habitat is present, although based on past surveys, no known nests have been documented in the project area. A multitude of raptor species and other migratory birds are present during spring and fall migration. No communal bald eagle winter roosts are known near the project area. Wild turkey (*Meleagris gallopavo*), ruffed grouse (*Bonasa umbellus*), dusky grouse (*Dendragapus obscurus*), and mourning dove (*Zenaida macroura*) are game birds that may occur within the project area. The project area does not support habitat for greater sage-grouse. Reptiles and amphibians that are known or expected to occur in the project area are fence lizards, garter snakes, prairie rattlesnake, rubber boa, and northern chorus frog (*Pseudacris maculata*). The leopard frog and boreal toad are sensitive species in Wyoming; however the proposed project area itself does not have any identified populations, and their habitats are limited within the project area footprint.

See Appendix B for a summary of threatened and endangered and sensitive species habitat and project effects for the Red Grade Trail Project.

3.5 Recreation Resources and Travel Management

There are currently no developed recreation resources on the site of the proposed RGP ROW. The predominant use in the area is related to visitors seeking access to the Bighorn National Forest or by occasional hikers and hunters. The two developed parking areas on State of Wyoming surface provide staging areas for motorized and non-motorized recreationists who cross through BLM-administered surface on the Red Grade Road to access private residences or designated trails on the Bighorn National Forest. There are approximately two miles of existing hiking and biking trails on State of Wyoming surface, and SCLT began reconstruction of two existing parking areas for trailhead use on State land in spring 2016. These trails are gaining in popularity, and no user conflicts have been observed or reported. The SCLT estimates that these trails received approximately 100 unique visits during the fall of 2015, and approximately 50 unique visits per week during the winter of 2016. The trails were closed for much of spring 2016 due to snowstorms. It is anticipated that with the completion of the proposed trail system, these figures would roughly double. Peak trail use would be concentrated to the spring and fall before June 1 and after September 30.

Non-motorized recreation on BLM-administered surface generally includes foot or bike travel on Red Grade Road, hiking, skiing, paragliding, mountain biking, hunting, and wildlife viewing. Several user-created trails and campsites are present in the area. During project analysis, the BLM Outdoor Recreation Planner visited the RGP on several occasions during the summer and fall and observed an average of 4 to 8 persons walking or biking on the shoulder of Red Grade Road during each visit. Members of the SCLT Recreation Working Group note that the area is gaining in popularity for skiing, paragliding, and mountain biking. The Bighorn National Forest hosts additional recreation resources on lands west of the RGP.

Red Grade Road is a county road maintained by Sheridan County. The road is not plowed during winter months and is closed to wheeled vehicles from December 15 through April 1, annually. The project area is currently designated as an area where motorized use is limited to existing trails. There are currently no designated trails on BLM-administered surface for off-highway vehicle travel off Red Grade Road. Over-snow travel is currently unrestricted on BLM-administered surface. With designated non-motorized trails, snowmobiles would be restricted to the Red Grade Road.

3.6 Visual Resources

The trail construction project area is classified as Visual Resource Management (VRM) Class II (BLM, 1986). The objective of VRM Class II is to retain the existing character of the landscape, thus projects should not be noticeable to the casual viewer. The project area is located near multiple residences and is bisected by an existing telephone line and bounded by Red Grade Road. Human modification is apparent to the landscape in adjacent areas to the east, predominately private lands. Fence lines and an overhead 7.2kV power line are also present within the view-shed. Less than 0.5 mile of the trails constructed on the State lands is visible from Highway 335. The lower portion of the trail near the State Base trailhead is in an area of few trees. It is expected that after one season of vegetation growth, most of the trail would not be visible. The trails may be visible from a few of the homes in the immediate vicinity.

3.7 Cultural Resources

In accordance with section 106 of the National Historic Preservation Act, BLM must consider impacts to historic properties (sites that are eligible for or listed on the National Register of Historic Places (NRHP)). For an overview of cultural resources that are generally found within BFO, refer to the *Draft Cultural Class I Regional Overview, Buffalo Field Office* (BLM, 2010). A Class III (intensive) cultural resource inventory (BFO project no. 70150012) was performed in order to locate specific historic properties which may be impacted by the proposed project. Table 4 shows the resources located in or near the proposed project area.

Table 4. Cultural resources located in or near the project area

Site Number	Site Type	NRHP Eligibility
48SH788	Historic	Eligible
48SH1858	Historic	Not Eligible

Site 48SH788 (Big Horn to Hyattville Road) is eligible for the National Register of Historic Places and is present in the project Area of Potential Effect (APE). In consultation with the Wyoming State Historic Preservation Office, it has been determined that the segment of 48SH788 within the project APE does not contribute to the site's eligibility.

3.8 Livestock Grazing

The majority of the BLM-administered land affected by the proposed action is within the White Creek (#22112) grazing allotment. The allotment consists of a single parcel of 280 acres of BLM-administered surface, 40 acres of State of Wyoming surface, and 2,418 acres of deeded (privately-owned) land. Grazing use is authorized on BLM-administered surface for 300 cattle from June 1 to September 30 of each year, for a total of 60 Animal Unit Months (AUMs). An informal evaluation of the White Creek Allotment in July 2011 revealed that the public rangelands at the project site were in excellent condition. Due to the forest-dominated vegetative community, lack of water sources, and steep slopes of the area, livestock grazing is concentrated primarily in lower elevations of the allotment.

The proposed Stock Rest Trailhead/Parking Area in Alternative 2 is within the Red Grade Stock Drive, a 40 acre stock driveway withdrawal parcel that is not leased for grazing. The 20 acres northwest of Red Grade Road are fenced off to provide a location for livestock to rest when trailing to and from mountain pastures. Stock drive use is authorized on an as needed basis. The pasture receives limited use (~10-15 days each year).

3.9 Lands and Realty

The project area includes several existing ROWs in the immediate areas within the NWNE and W2NW, Section 27. All authorized uses are active except for the abandoned aerial telephone line. Table 5 shows the rights-of-way located within the project area.

Table 5. BLM rights-of-way located within the project area

ROW Casefile No.	Authorized Use	ROW Holder
WYW-0119066	Aerial telephone line--inactive	Big Horn Services, Inc.
WYW-8260	Overhead 7.2kV power line--active	Montana-Dakota Utilities
WYW-64960	Buried telephone line--active	Qwest Corporation
WYW-81527	Access road--active	Goldie Steigelman
WYW-123913	Buried telephone line--active	Qwest Corporation

Above-ground structures, including the overhead power line and abandoned aerial telephone line, are located in the W2NW parcel, and several proposed trails cross near or under these structures at various points. Any existing trails that are proposed for decommissioning would not be designated as part of the Red Grade Trail System, although they would likely be intercepted at various points along the new trail routes. These trails would not be included in the ROW grant.

The Stock Rest Trailhead/Parking Area proposed in Alternative 2 in the NWNE, Section 27 lies within the Red Grade Stock Drive Withdrawal No. 3, established by Secretarial Order on October 20, 1917, and is currently used by local ranchers. ROWs could be authorized within withdrawal areas if they are compatible with and do not conflict with the purpose of a withdrawal. Over the past several decades the

BLM has issued several compatible ROWs in the Red Grade Stock Drive withdrawal. There are no ROWs in the vicinity of the proposed Aspens Trailhead/Parking Area.

4. Environmental Effects

This section describes potential effects for each alternative on the existing natural and social environmental conditions in the planning area. The extent of impacts to each resource is described using the following terms:

- Negligible – The effect on the resource would be barely detectable; less than one percent of the resource would be affected. This level of effect is considered to be not significant.
- Minor – The effect on the resource would be slight but detectable; there would be a small change in the resource. This could include effects on one percent to five percent of the resource. This level of effect is considered to be not significant.
- Moderate – The effect on the resource would be readily apparent; there would be a measurable change in the resource. This could include effects on between five percent and ten percent of the resource. This level of effect is considered to be potentially significant.
- Major – The effect on the resource would be great; there would be a highly noticeable, long-term, or permanent measurable change in the resource. This could include effects on more than ten percent of the resource. This level of effect is considered to be significant.

4.1 Direct and Indirect Effects of Implementation of the No Action Alternative

The No Action Alternative received analysis in the 2015 Buffalo Field Office Proposed Resource Management Plan (RMP) Final Environmental Impact Statement (FEIS) (BLM, 2015d). The analysis is incorporated here by reference. Trails would not be constructed on BLM-administered surface. Construction on State land has commenced, and the Forest Service has not started scoping.

In the absence of established trails, users crossing BLM-administered land would continue to use the network of social trails. These trails do not support bikes, forcing bicyclists to use Red Grade Road. These social trails are not designed to reduce erosion and would continue to degrade in areas. Additionally, these trails are not designed to minimize the impact to visual resources and as new social trails are created, visual impacts could be created. Without proper signage, conflicts among different user types would continue, and there would continue to be safety issues among different user groups. Safety concerns would continue as users would continue to hike and/or bike on Red Grade Road rather than on established trails.

The potential for increased economic benefits would not be realized with the No Action Alternative. Local businesses would likely continue to receive the same level of customers, and local residents and visitors would continue to go elsewhere for quality mountain biking experiences, as developed hiking

and mountain biking opportunities would be limited. Landowners living adjacent to the trails and trailhead would have their concerns about trespassing and increased traffic on Red Grade Road alleviated.

The No Action Alternative would continue existing uses and impacts on BLM-administered lands. The parcel would continue providing forage and wildlife habitat. The parcel would provide opportunities for self-reliant, arduous hikers to transition from the staging areas on State of Wyoming lands, using individually determined routes across the RGP, to eventually access the Bighorn National Forest trail network. Lastly, the No Action Alternative would also cause less wildlife habitat fragmentation by virtue of no established trails.

Alternative 1, No Action, will not receive further analysis in this EA.

4.2 Direct and Indirect Effects of Implementation of Alternative 2

Alternative 2 is the authorization of a ROW grant for construction of a portion of a phased development trail system, including two trailheads/parking areas and 6.49 miles of trails.

Across the entire project area, implementation of the proposed action is expected to have negligible effects on the existing vegetative buffer conditions, soil erosion, and sedimentation. Design features, including USFS and IMBA trail construction guidelines, and BMPs applied through conditions of approval, should minimize negative environmental effects.

In the event of reclamation, BLM has a reclamation plan. The actions outlined in the plan are not identified in the analysis below, but are available upon request (BLM, 2016).

4.2.1 Effects of Alternative 2 on Soils/Ecological Site/Vegetation

Surface disturbance associated with trail construction would completely remove vegetation from an 18-48 inch trail to create the trail tread. Minor rock chipping may also be necessary to conform the trail to IMBA standards. The proposed full-bench construction requires more excavation and leaves a larger back slope than partial-bench construction, but the trail bed would be more durable and require less maintenance to prevent erosion.

During construction there could be a short term increase in sediment to areas adjacent to the project due to removal of protective cover provided by vegetation. Unsurfaced trails could provide a source of sediment dislodged by erosive forces. The potential for rockslides is mitigated in the design of the trail system, with minimal cut and fill slopes proposed. The affected environment indicated some rock outcroppings but no rubble land or talus prone to rockslides. Trails may serve as preferential pathways for surface runoff that accumulates on the trail, especially in steep terrain. Common impacts include vegetation loss and compositional changes, soil compaction, erosion, and muddiness, exposure of plant

roots, and trail widening (Hammit & Cole, 1998; Leung & Marion, 1996; Olive & Marion, 2009). The trail design and construction practices would minimize this effect.

Erosional rates are greatest on steep trail grades and in locations where topography and elevation combine. Soils with fine and homogeneous textures are also more susceptible to erosion. Poorly drained and organic soils are most susceptible to tread muddiness, particularly in flatter terrain where trails become incised, and water does not readily drain from treads. Furthermore, tread muddiness is a strong contributor to tread widening and multiple trail creation as hikers seek to circumvent muddy sections of trails (Marion, 2006). Vegetation type and density may also play a role by indirectly influencing visitor behavior. Trail maintenance actions, including installation and upkeep of tread drainage features, rock steps, and bridging, are also vital to limiting soil erosion and tread muddiness, which in turn, influence user behavior and the extent of impacts such as tread widening and secondary tread development.

Construction of the trails would require cutting back herbaceous vegetation, such as tree limbs and woody understory, 3-5 feet from the centerline of the constructed trail. In most cases, pruning would be preferred over total removal of the tree or shrub. The actual width of disturbance would vary based on the constructed trail width and topographic factors.

Implementation of the Red Grade Trail System proposal would result in authorization of a ROW grant for construction of 6.49 miles of trail on BLM-administered surface, which would be 18 to 24 inches wide, natural surfaced, and non-motorized, and two trailheads/parking areas. The 10-foot ROW proposed on BLM-administered surface estate would include 3.15 acres potential disturbance for trail construction during the construction phase.

There is also a potential long term disturbance for parking lot and access road construction. Construction of the Aspens and Stock Rest Trailheads/Parking Areas would result in removal of herbaceous vegetation from a total area of approximately 2.1 acres. Exposure of mineral soil at these sites would increase the potential for establishment of invasive species such as cheatgrass. The ROW would require weed control prior to and following construction, and an approved Pesticide Use Plan (a standard grant term and condition) would be required prior to spraying. An appropriate ecological site seed mix prescribed by the BLM would be used to re-vegetate the trailhead slopes after construction (or in the case of relinquishment or termination).

The proposed trails and trailheads/parking areas construction and trail use after construction pose a risk of spreading noxious weeds throughout the project area. During construction, mud and dirt containing weed seeds would readily adhere to equipment and workers' shoes and clothing and be moved along the trails. Weed seeds and plant parts can attach to trail users and be spread throughout the trails. Any noxious weeds at the sites or along trails on BLM-administered land would be treated by the ROW

holder according to included mitigation measures, limiting the threat of infestation. Additional mitigation measures would address trail use after construction (See Condition of Approval #3 below).

4.2.2 Effects of Alternative 2 on Water Resources

The potential exists that construction and use of the trail system could promote erosive conditions. These conditions could in turn provide sediment that may be mobilized and carried into nearby stream channels. The nearest surface water withdrawal point permitted with the Wyoming State Engineers Office for domestic use is in excess of 1500 feet from any proposed surface disturbing actions on the BLM-managed surface. Therefore, in most cases, existing vegetation would capture mobilized sediment and prevent it from reaching any permitted water resources. The included trail design features (SCLT, 2014), in combination with appropriate placement of water-bars, would minimize the potential for trail erosion. The vegetative conditions of the project area, coupled with the distance between the disturbed areas and the existing water resources, and drainage design features, result in negligible impact to those resources.

4.2.3 Effects of Alternative 2 on Forestry, Fuels, and Sensitive Plant Species

The proposed ROW would have minor to negligible positive effect on forestry, fuels, or limber pine. Most trees larger than 6 inches in diameter would be retained as well as healthy limber pine, while understory trees and downed woody fuels would be removed and scattered away from the trail edge. The proposed action would affect less than 3% of the BLM-administered lands but would reduce ladder fuels within the ROW and slightly improve forest health by reducing competition from conifer seedlings, saplings, and poles.

Because vegetation and slash material would be removed from the parking areas, and would be lopped and scattered away from the edge of the trail as discussed in Sections 2.2.2 and 2.2.3, the construction would create narrow fuel breaks in the project area. In the event of future wildfire, the parking areas would enhance safety and facilitate firefighting operations, and the trails may act as hand lines for surface fires.

Prior to construction, BLM would survey the approved proposed trail system for William's wafer parsnip where it intersects suspected habitat. An occurrence of mountain lady's slipper (MLS) was documented in the area of the proposed Aspens Trailhead/Parking Area in 2004. The trailheads/parking areas and trails proposed in Alternative 2 would result in approximately 0.29 acre of disturbance in the known MLS occurrence area, potentially impacting 9 individual plants. However, this number is likely to be less than projected, as the location has already been disturbed and compacted by its use as a campsite. Surveys for mountain lady's slipper will be completed as time and priorities permit. Where possible, the trail would be re-routed to avoid habitat occupied by William's wafer parsnip and mountain lady's slipper. If this is not possible, the limited surface disturbance proposed by the project is not likely to have a significant impact on any populations present.

4.2.4 Effects of Alternative 2 on Wildlife, Sensitive Wildlife Species, and Threatened/Endangered Species

The proposed ROW would have no effect on threatened or endangered species. Trail construction is likely to cause minor short-term disturbance or displacement to identified wildlife species. The placement of a trail system would cause nominal habitat fragmentation within existing contiguous habitat types. The potential for disrupting nesting migratory birds is possible during the construction phase as well as casual trail use activities; however these impacts should be minimal. These impacts would not extend beyond the immediate vicinity of the trail footprint and parking areas. Long-term and/or seasonal displacement of wildlife may also occur after project construction, depending on the amount of use on the trail once the project is complete. This displacement should have negligible effects on local wildlife population levels, as trail use is reduced during winter and early spring when some wildlife species may be at their most vulnerable to anthropogenic disturbances. In addition, the visual and auditory screening that is provided along numerous sections of the trail through the vegetation and topography which is immediately adjacent to the trails and parking areas would further reduce anthropogenic impacts to local wildlife.

The potential for impacts to BLM-sensitive species is greatest for the long-eared myotis (*Myotis evotis*) and Townsend's big-eared bat (*Corynorhinus townsendii*) through exposing currently unknown roosts and hibernacula to humans. The BLM does not currently know of bat roosts in this area, making this impact difficult to quantify. It is anticipated that very few trees that may provide roosting habitat would be removed for trail construction which would reduce the likelihood of directly impacting roosting bat species. Impacts to sensitive species would be mitigated by completing surveys prior to constructing the trail and avoiding negative impacts to sensitive species habitats where identified.

Mitigation measures for resources affected are incorporated into conditions of approval. A BLM Biologist will survey the project area if construction or maintenance actions are planned during the nesting seasons to identify potential impacts to nesting avian species within and adjacent to the project area. These, in conjunction with the mitigation identified in the proposal/design features, demonstrate the long-term impacts to wildlife are anticipated to be minimal.

4.2.5 Effects of Alternative 2 on Recreation Resources and Travel Management

The proposed action would afford additional public access and facilitate high-quality recreational opportunities on the Red Grade Parcel (RGP) and would improve non-motorized public access to adjacent lands managed by USFS. The primary activities on the proposed RGP ROW and trail would be mountain biking and hiking; however, backcountry horse use is planned for accommodation in later phases of trail development. While the trail system is expected to improve opportunities for biking, hiking, and other non-wildlife-dependent activities, there would likely be a negligible impact to activities such as hunting due to localized dispersion of wildlife from the immediate vicinity.

The estimated average length of visit would be 2-4 hours. Trail construction would improve public access to public lands and would likely increase the amount of use at the RGP. The proposed parking areas are expected to accommodate any additional use. There would be no changes to the existing standard 14-day camping limit, and overnight use would be expected to increase marginally as the predominant user groups would focus on daylight hours. Inclusion of outdoor ethics educational materials on trailhead signs would assist in reducing impacts by the recreating public.

An increase in visitation can cause a resultant increase in human waste. Currently, no vault toilets are planned on BLM-administered surface. BLM would require a portable toilet at the Aspens Trailhead/Parking Area during peak use season.

Red Grade Road would likely see a small increase in daily traffic during the months the road is open to wheeled vehicles by users accessing the upper trailheads. However, the resultant increase may be offset by users accessing the trail system from the lower trailheads and hiking or biking up to the Bighorn National Forest, rather than hiking or biking along the road.

In the event of decommission and reclamation, users would be forced to recreate elsewhere. Visitors would no longer have the opportunity for safe recreation in the Red Grade Parcel and would be forced to hike or bike along Red Grade Road.

The potential effects of this project to recreation resources and travel management are expected to be moderately positive.

4.2.6 Effects of Alternative 2 on Visual Resources

A Visual Contrast Rating (VCR) determined that the proposal would conform to VRM Class II Objectives (BLM, 2015f). The trailheads/parking areas would result in small-scale but long-term impacts to the visual environment. Safety concerns for entering and exiting vehicles require surface disturbance and vegetation removal along the parking lot access road. Vertical structures associated with the trail system proposal would be limited to signs and fence posts and would generally not exceed 6 feet in height. The Stock Rest Trailhead/Parking Area final design would include landscaping components to blend with the natural environment and reduce weed infestation.

Portions of the developed trails would be visible intermittently to traveling vehicles or nearby residents. In general, the trail tread itself would not be noticeable from Red Grade Road for the majority of the planned trail system, but riders or hikers on the trail may be visible. Trail design would screen the trail from key observation points using natural topography and following contours wherever possible. Short-term disturbance associated with trail construction may affect the natural color and line, but should be unnoticeable after a growing season. The linear feature created by trail construction would be largely obstructed by canopy cover and would not be expected to contrast with the surrounding landscape.

Visual impacts from Red Grade Road and nearby residences would be minimal and short term, as topography and canopy cover would screen the majority of the project area. Additionally, above-ground structures, including the overhead power line and abandoned aerial telephone line, are located in the W2NW parcels and would be clearly visible to recreationists along the trail as several proposed trails cross near or under these structures. Considering the presence of other modifications in the project area (e.g., telephone poles, fences, homes), the impact of implementing the trail system proposal is expected to be minor. Any visual impacts are expected to be most noticeable immediately following construction. Adherence with the mitigation measures (Section 6) addressing these visual contrasts should minimize visual resource impacts from the ROW, and it is anticipated that the proposed trail system would not detract from the existing character of the landscape.

In the event of reclamation, rehabilitation crews and activities may be visible from below the Red Grade Parcel, but these impacts would be short term and would not impact the overall viewshed.

The potential effects of this project to visual resources are expected to be negligible.

4.2.7 Effects of Alternative 2 on Cultural Resources

BLM policy states that a decision maker's first choice should be avoidance of historic properties (BLM Manual 8140.06(C)). If historic properties cannot be avoided, mitigation measures must be applied to resolve the adverse effect. No contributing portions of eligible site 48SH788 (Big Horn to Hyattville Road) would be physically impacted. The proposed project would not diminish any aspects of integrity of the historic property. Following the State Protocol between the Wyoming BLM State Director and the Wyoming State Historic Preservation Officer (SHPO), Section V(E)(v)(b) the BLM determined that the project would result in "No Adverse Effect." The Wyoming SHPO concurred with the Bureau's determination on March 24, 2016. If any cultural values (sites, features, or artifacts) are observed during operation, they would be left intact and the Buffalo Field Manager notified. If human remains are noted, the procedures described in Appendix L of the PRB FEIS must be followed. Further discovery procedures are explained in Standard COA (General)(A)(1) and Appendix K of the Wyoming Protocol. The potential effects of this project are expected to be negligible.

4.2.8 Effects of Alternative 2 on Livestock Grazing

During trail and trailhead/parking area construction, grazing livestock may be displaced from the immediate area. SCLT would coordinate with grazing lessees and Stock Drive users to minimize timing conflicts. While the portions of the project on BLM-administered land within the White Creek Allotment are leased for grazing, they have historically received little use due to rough terrain and high elevation, and no long term effects to grazing are expected.

Construction of the Stock Rest Trailhead/Parking Area would fence and remove approximately 1 acre of grazing land from the Red Grade Stock Drive. Because this pasture receives limited use, long term effects are expected to be negligible, and there would be no expected reduction in AUMs. The trailhead

would be designed to minimize conflicts between Stock Drive users and recreationists. Livestock trailing along Red Grade Road would likely be unaffected by the new trail system. If livestock movement interferes with recreational trail use, drift fences may be constructed by BLM to keep livestock in designated areas during trailing. Appropriate mitigation measures would be applied as part of the range improvement project terms and conditions. If significant conflicts arise between trail users and livestock, BLM will evaluate the need for additional fencing in a separate analysis. Signage at trailheads would indicate that the area is leased for livestock grazing.

4.2.9 Effects of Alternative 2 on Existing ROWs (or Authorized Uses)

Trails would be designed using established best practices espoused by IMBA and USFS which reduce the level of maintenance necessary to reduce negative environmental effects. The trailheads/parking areas would be constructed according to engineered diagram(s) incorporated into the ROW grant that incorporate BLM BMPs and USFS trailhead design guidelines to adequately address slope stabilization, drainage, re-vegetation, safe ingress and egress, and resources protection.

There are no identified conflicts with the existing authorized ROWs and associated uses within the project area. A cadastral survey would ensure that the proposed action is properly located and avoid encouraging inadvertent trespass by the public. The Stock Rest Trailhead/Parking Area would be constructed south of the existing private property access road and two adjacent buried telephone lines, and with a sufficient offset to allow continued, unencumbered use, thus alleviating any potential concerns with those uses.

The proposed action is not expected to affect maintenance of the Red Grade County Road as the Aspens Trailhead/Parking Area would be built immediately adjacent to an established turn-out and the Stock Rest Trailhead/Parking Area would be accessed by a BLM-standard constructed road intersecting the county road.

Trail and trailhead maintenance activities would be performed according to the applicant's Reclamation Details and Maintenance Activities Plan (SCLT, 2014), which states that initially there would be weekly maintenance activities, then annually for the duration of the trail system. If reclamation of any trails or trailheads becomes necessary through a relinquishment or a termination, the reclamation details would be coordinated with the BLM at the time of abandonment. The Aspens and Stock Rest trailheads/parking areas may potentially serve continued administrative and public use if there is supporting information of ongoing snowmobile and ORV use by the public in the project area and for potential agency fire-fighting purposes.

The potential effects of this project are expected to be negligible.

4.2.10 Effects of Alternative 2 on Socioeconomics

The unique location of this site, so close to the largest population center in the county, would likely bring increased economic opportunities and customers to local businesses. The close proximity to Interstate 90 would also attract visitors from other areas. The potential effects of this project are expected to be moderate and positive.

Studies have shown that trail systems improve the local economy by increasing customers for local businesses, increasing property values of nearby homes, and improving the quality of life and health for nearby residents and for the local community (Webel, 2000). Additionally, bicycle trails have a positive impact on local businesses by increasing equipment sales as well as bicycle repair and maintenance costs (McDonald, 2011).

Trails also provide recreation opportunities at no or minimal cost to families relative to other activities, and studies have shown that recreating on trails improves people's health and contributes to lower healthcare costs (PLTA, n.d.).

A trails project can help build partnerships among private companies, landowners, local government, and advocacy groups. In addition, when residents are encouraged to become involved in a trails project, they feel more connected to the community. A popular and well-managed trail system can serve as a focal point for a community, leading to greater interactions among residents, improved cohesion of a community, a greater sense of belonging, and improved openness and welcoming of visitors.

In the event of reclamation, local businesses could see a drop in customers, negatively impacting the local economy.

4.3 Direct and Indirect Effects of Implementation of Alternative 3

Alternative 3 is the authorization of a ROW grant for construction of a portion of a phased development trail system, including one trailhead/parking area and 3.84 miles of trails.

Across the entire project area, implementation of the proposed action is expected to have negligible effects on the existing vegetative buffer conditions, soil erosion, and sedimentation. Design features, including USFS and IMBA trail construction guidelines, and BMPs applied through conditions of approval, should minimize negative environmental effects.

4.3.1 Effects of Alternative 3 on Soils/Ecological Site/Vegetation

Impacts of Alternative 3 would be similar to Alternative 2 as referenced above. The only changes are to trail length and acreage of disturbance and are included in this section.

The proposed action would include the authorization of a ROW grant for construction of 3.84 miles (18-24 inches wide, natural surface, non-motorized) and one trailhead/parking area on BLM-administered

surface. The 10-foot ROW proposed on BLM-administered surface estate would include 2.02 acres of potential disturbance for trail and trailhead/parking area construction during the construction phase.

There is potential long term disturbance of approximately 0.16 acre for trailhead/parking area and access road construction that would result in removal of herbaceous vegetation.

4.3.2 Effects of Alternative 3 on Water Resources

Impacts of Alternative 3 would be similar to Alternative 2 as referenced above.

4.3.3 Effects of Alternative 3 on Forestry, Fuels, and Sensitive Plant Species

The effects of Alternative 3 on forestry, fuels, and limber pine would be similar to Alternative 2. Any beneficial effects would be limited to less than 2% of the BLM-administered lands, but ladder fuels would be reduced within the ROW and forest health may improve slightly.

4.3.4 Effects of Alternative 3 on Wildlife, Sensitive Wildlife Species, and Threatened/Endangered Species

Impacts of Alternative 3 would be similar in nature and intensity to Alternative 2 as referenced above. Differences would be negligible due to the location of proposed parking areas which are adjacent to existing major travel corridors and currently facilitate elevated levels of anthropogenic disturbances.

4.3.5 Effects of Alternative 3 on Recreation Resources and Travel Management

Impacts of Alternative 3 would be similar to Alternative 2 as referenced above.

The proposed parking area is expected to accommodate any additional use and would focus non-motorized recreation away from the roadway, thus providing a much safer environment for hikers and bikers alike. However, one parking area may not meet the demand, and some users may be turned away due to lack of adequate parking space.

4.3.6 Effects of Alternative 3 on Visual Resources

Impacts of Alternative 3 would be similar to Alternative 2 as referenced above, but with fewer visual effects due to the addition only one trailhead/parking area.

4.3.7 Effects of Alternative 3 on Cultural Resources

Impacts of Alternative 3 would be similar to Alternative 2 as referenced above; however, less surface disturbance would reduce the potential for unknown cultural resources to be impacted.

4.3.8 Effects of Alternative 3 on Livestock Grazing

Impacts of Alternative 3 would be similar to Alternative 2 as referenced above.

4.3.9 Effects of Alternative 3 on Existing ROWs (or Authorized Uses)

Impacts of Alternative 3 would be similar to Alternative 2 as referenced above.

4.3.10 Effects of Alternative 3 on Socioeconomics

Impacts of Alternative 3 would be similar to Alternative 2 as referenced above. However, with only one trailhead/parking area, some users may be precluded from using the trails, which would reduce use and possibly reduce business in the local community.

4.4 Direct and Indirect Effects of Implementation of Alternative 4

Alternative 4 is the authorization of a ROW grant for construction of a system of 1.89 miles of trails.

Across the entire project area, implementation of the proposed action is expected to have negligible effects on the existing vegetative buffer conditions, soil erosion, and sedimentation. Design features, including USFS and IMBA trail construction guidelines, and BMPs applied through conditions of approval, should minimize negative environmental effects.

4.4.1 Effects of Alternative 4 on Soils/Ecological Site/Vegetation

Impacts of Alternative 4 would be similar to Alternative 2 as referenced above. The only changes are to trail length and acreage of disturbance and are included in this section.

The proposed action would include the authorization of a ROW grant for construction of 1.89 miles (18-24 inches wide, natural surface, non-motorized) of trail on BLM-administered surface. The ROW proposed on BLM-administered surface estate would include 0.92 acre potential disturbance for trail construction during the construction phase.

4.4.2 Effects of Alternative 4 on Water Resources

Impacts of Alternative 4 would be similar to Alternative 2 as referenced above.

4.4.3 Effects of Alternative 4 on Forestry, Fuels and Sensitive Plant Species

The effects of Alternative 4 on forestry, fuels, and limber pine would be similar to Alternative 2. Any beneficial effects from trail construction would be less, but ladder fuels would be reduced within the ROW, and forest health may improve slightly. No trailheads would be developed so there would be no benefit to safety and firefighting operations in the event of future wildfire.

4.4.4 Effects of Alternative 4 on Wildlife, Sensitive Wildlife Species, and Threatened/Endangered Species

The effects of Alternative 4 on wildlife, sensitive wildlife species, and threatened/endangered species would be similar to Alternative 2 as referenced above.

4.4.5 Effects of Alternative 4 on Recreation Resources and Travel Management

Impacts of Alternative 4 would be similar to Alternative 2 as referenced above. However, with no proposed parking areas on BLM-administered surface, there would likely be a shortage of parking, and users may be precluded from being able to use the area on busier days. With the lack of available

parking farther up Red Grade Road, some users who may not have the ability or skills to hike or bike farther up the mountain may not be able to use the trails on BLM-administered surface.

With one trail designated as multi-use, there may be safety and use concerns as bikers and hikers may experience conflicts. The alternative, as submitted, did not specify which trail was downhill bike only and which was multi-use, so this would need to be determined to prevent the possibility of user conflicts and accidents, especially when dogs and/or children are on these trails. With no trailheads/parking areas, having a trail designated as downhill mountain biking only would create a challenge for users as they would not have a place to park and unload at the top of the trail.

Additionally, with only two trails, users would not be able to explore the area very thoroughly, nor would users of varying ability be able to recreate on trails that offer different levels of challenge and skill. The potential effects of this project would be minor and positive.

4.4.6 Effects of Alternative 4 on Visual Resources

Impacts of Alternative 4 would be similar to Alternative 2 as referenced above, though with less disturbance, it is likely that less of the trail would be visible, and with no trailheads/parking areas, there would be fewer visual effects.

4.4.7 Effects of Alternative 4 on Cultural Resources

Impacts of Alternative 4 would be similar to Alternative 2 as referenced above; however, less surface disturbance would reduce the potential for unknown cultural resources to be impacted.

4.4.8 Effects of Alternative 4 on Livestock Grazing

Impacts of Alternative 4 would be similar to Alternative 2 as referenced above; however, with no planned trailheads/parking areas, grazing would not be affected.

4.4.9 Effects of Alternative 4 on Existing ROWs (or Authorized Uses)

Impacts of Alternative 4 would be similar to Alternative 2 as referenced above.

4.4.10 Effects of Alternative 4 on Socioeconomics

Impacts of Alternative 4 would be similar to Alternative 2 as referenced above. However, with fewer trails and no trailhead/parking area, trail use may be lower, resulting in less positive impact on community businesses. The potential effects of this project would be moderate and positive.

Table 6. Issues comparison of the alternatives

Issue	Alternative 1	Alternative 2	Alternative 3 (Preferred)	Alternative 4
Miles of trail	At least 0.6, increasing as social trails increase	6.49	3.84	1.89
# of trailheads/ parking areas	0	2	1	0
Acreage disturbance	At least 0.29, increasing effects as social trails increase	5.25	2.02	0.92
Fire staging/ firefighting operations areas	0	2	1	0
Mountain lady's slipper	Increasing effects as social trails increase	Overlap Aspens Trailhead/Parking Area	Overlap Aspens Trailhead/Parking Area	Minimal
Habitat fragmentation	Increasing effects as social trails increase	Most	Moderate	Minimal
Trail design plan	None	SCLT submitted	SCLT submitted	None submitted
Monitoring and maintenance plan	None	SCLT submitted; weekly at first and then yearly	SCLT submitted; weekly at first and then yearly	None submitted
Reclamation plan	Not applicable	SCLT submitted	SCLT submitted	None submitted; would need to be developed
Trail uses	Multi-use	Segregated by use	Segregated by use	Multi-use
Visual resources	Increasing effects as social trails increase	Fencing at 2 parking areas, trails	Fencing at 1 parking area, trails	Trails
Livestock grazing	Not affected	Minimally affected near Stock Rest Trailhead/Parking Area	Not affected	Not affected

5. Cumulative Effects

5.1 Cumulative Effects of Alternative 2

Other approved actions in the Red Grade area include fuels reduction projects using prescribed fire, which would have similar effects to those described for Alternative 2. Cumulative effects (both positive and negative) from trail construction are unlikely to be notable beyond the local level.

SCLT suggests that trails are integral to Sheridan County's future planned growth. Amenities such as developed recreation facilities like trails and access to public lands can serve as attractants to potential homebuyers and influence regional growth (Deller et al., 2001). It is reasonably foreseeable that the initial use of the Red Grade Parcel (RGP) ROW would be modest. It is also foreseeable that within 10 years of the completion of the proposed RGP ROW that trail visitation would transition to a more rapid growth in use experienced by other trails within the region.

Over an extended timeframe the trail system could blossom into a regional tourism attribute. Experiences from other regional trails linking outdoor experiences to a small town or urban environment support this premise, such as the Centennial and Mickelson Trails in the Black Hills. For example, in the decade since the completion of South Dakota's Mickelson Trail, visitation has increased by more than 200% and several annual events (e.g., marathons and bicycle tours) are now hosted along the trail. While this example is not predictive of the future use of the Red Grade Trail Project, it is instructive and indicative of the general aspiration people have for slightly structured outdoor recreation using trails in a natural setting. The cumulative effect of construction of a trail extension may also gradually contribute to an increased quality of life for local residents and visitors, and thus may have a positive socioeconomic impact within Sheridan County.

No additional cumulative effects are anticipated (other than those described above) for soils/ecological site/vegetation; water resources; forestry, fuels, and sensitive plant species; visual resources; cultural resources; livestock grazing; or existing ROWs (or authorized uses).

Maintenance of the trail system would be conducted by SCLT, who has hired a Trails Manager to oversee trail and infrastructure maintenance, community engagement, and safety. The Trails Manager's consistent presence along the trails would demonstrate SCLT's continuing commitment to this project, as well as providing opportunity for community members and visitors to submit comments and concerns regarding the trail system.

If, at any point, this project would be abandoned or relinquished, or the ROW terminated, Sheridan County would reclaim the developed trails using hand labor, or machine labor where appropriate, to rehabilitate the area and return it to current conditions. Similarly, the Aspens and Stock Rest Trailheads/Parking Areas would be reclaimed. This rehabilitation would create minimal noise from the

reclaiming actions and would possibly create increased traffic along Red Grade Road during the rehabilitation period, though it is unlikely to be noticeable beyond the local level.

Removal of the Red Grade Trail System would have a negative effect on the local users accustomed to recreating in the area as well as visitors to the area. Mountain bikers would be forced to drive at least 30 minutes away from Sheridan to find similar mountain biking opportunities.

Businesses and restaurants would likely see a drop in customers, including the bicycle supply and maintenance/repair shops.

Due to the existing conditions within the project area cumulative impacts to wildlife would be negligible.

5.2 Cumulative Effects of Alternative 3

The cumulative effects of Alternative 3 would be similar in scope to Alternative 2 as noted above, though with fewer trails and only one trailhead/parking area, effects would be reduced and there would be less disturbance. One parking area may not be enough to accommodate demand for use of the area, so some users may be forced to recreate elsewhere. With reduced use, there may be fewer safety and traffic issues along Red Grade Road. Businesses in Sheridan may see increased customers; however, many of them would be unlikely to be repeat customers if they had been turned away by inadequate parking in the Red Grade area.

5.3 Cumulative Effects of Alternative 4

The cumulative effects of Alternative 4 would be similar in scope to Alternative 2 as noted above, though with fewer trails and no trailhead/parking area, effects would be reduced and there would be less disturbance. With no parking areas in the BLM-administered area, many users may be forced to recreate elsewhere. Alternatively, with limited parking, users may decide to park along Red Grade Road and hike or bike up the road to access the trails on the BLM-administered parcel. This could create more safety and traffic issues. Businesses in Sheridan may see increased customers; however, many of them would be unlikely to be repeat customers if they had been turned away by inadequate parking in the Red Grade area. With no parking area, there would be no location on BLM surface for firefighting operations should a wildfire occur in the area, thus reducing safety.

6. Proposed Mitigation/Monitoring

Mitigation: The applicant must observe the trail construction standards listed below.

Monitoring: SCLT will track atmospheric, environmental, and trail conditions to manage any seasonal or temporary closures to reduce erosion and protect wildlife as needed or directed. Based on community feedback, SCLT proposes to seasonally close the hiking-only trail, “On the Edge,” with the goal of

providing ample undisturbed habitat during the mating period of dusky grouse found in this vicinity. The closed area will include signage explaining the nature and timing of the closure.

Conditions of Approval

1. Any changes to proposed activities, trail centerline, or other areas of operations must be approved by the authorized officer and documented in the ROW grant.
2. The SCLT will annually maintain the trail to the construction standards set forth in the project description. The trail will be maintained to meet both USFS and International Mountain Biking Association trail standards to minimize potential erosion associated with use of the trail.
3. The applicant will be responsible for prevention and control of noxious weeds and weeds of concern before, during, and after project construction on all areas of surface disturbance associated with this project. Prior to the use of pesticides on public land, the applicant will obtain from the BLM authorized officer a pesticide use permit (PUP). The PUP must include a written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer to such use. Use of pesticides shall comply with the applicable Federal and State laws. Trailhead signage will encourage users to prevent the spread of noxious weeds.

All equipment and hand tools used in the trail and trailheads/parking areas (depending on alternative) construction will be washed prior to entry onto BLM-administered lands. Weed Free hay will be required within the project area.

4. To protect the existing and native plant communities, any seed mixes used for re-vegetation of disturbed areas will be reviewed by a BLM Range Specialist to ensure they are appropriate for the site.
5. SCLT will coordinate with the BLM and stock driveway or stock rest users to avoid use and timing conflicts during construction of the Stock Rest Trailhead/Parking Area (Alternative 2). The Stock Rest Trailhead/Parking Area will be fenced to prevent user conflicts and livestock damage to trailhead facilities. BLM will review final trailhead design plans before ROW authorization.
6. The permittee must submit a mock-up or suggested language for any signs to the BLM for consideration at least 30 days in advance of placement. Only signs that have received written approval by the BLM will be permitted on BLM-administered surface. Portal signs on BLM-administered surface should include the BLM logo. Signs should encourage principles espoused by

the Leave No Trace Center for Outdoor Ethics, indicate that the area is open range, and that individuals may encounter livestock and/or wildlife on the trail.

7. To protect visual resources, above-ground structures should not extend above the horizon line when viewed from Red Grade Road. Locally sourced gravel must be used for this project. Rock or cement that creates a strong contrast with the existing environment must not be used. All permanent above-ground structures (e.g., kiosks, fences, etc.) will be painted or stained to blend with the natural color of the landscape. If paint is used, the color must simulate a "Standard Environmental Color." The Standard Environmental Color appropriate for the Red Grade Trail System is Juniper Green. Temporary structures (i.e., generators, etc.) present for more than 3 months will be required to comply with visual resource mitigation.

8. To protect BLM Sensitive Species, such as northern goshawk, bats, and nesting migratory birds, a biologist will perform surveys during the appropriate season. If these species are found and determined to be impacted, then timing restrictions appropriate to protect that species will be applied. This condition will apply to construction and maintenance requiring motorized equipment. BLM will survey suspected habitat in the project area for William's wafer parsnip prior to surface disturbance and work to avoid populations where possible. Surveys for mountain lady's slipper will be completed as time and priorities allow, avoiding identified populations where possible.

9. If any cultural values [sites, artifacts, human remains (BLM, 2003a; PRB FEIS Appendix L)] are observed during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. The authorized officer (AO) will conduct an evaluation of the cultural values to establish appropriate mitigation, salvage, or treatment. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the BLM AO. Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places;
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and
- a timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction measures.

If paleontological resources, either large or conspicuous, and/or a significant scientific value are discovered during construction, the find will be reported to the Authorized Officer immediately. Construction will be suspended within 250 feet of said find. An evaluation of the paleontological discovery will be made by a BLM approved professional paleontologist within five (5) working days, weather permitting, to determine the appropriate action(s) to prevent the potential loss of any significant paleontological values. Operations within 250 feet of such a discovery will not be resumed until written authorization to proceed is issued by the Authorized Officer. The applicant will bear the cost of any required paleontological appraisals, surface collection of fossils, or salvage of any large conspicuous fossils of significant scientific interest discovered during the operation.

10. The Aspens Trailhead/Parking Area must undergo a BLM timber appraisal prior to construction. The proponent will define and mark the trailhead and contact the BLM Forester. The BLM must receive appropriate market values for removed timber. Additionally, any trail maintenance activities must comply with Wyoming BLM Management Guidelines for Whitebark and Limber Pine on the BLM Wyoming Sensitive Species List (BLM, 2011b).

11. The ROW holder construction areas will be inspected and other ROW holders in the immediate area will be notified. The Wyoming One Call System 811 (or 1-800-849-2476) must be contacted for clearance before construction activities begin, and the holder will take measures to protect all existing authorized uses. Sheridan County Road and Bridge must also be notified to coordinate any traffic concerns along the Red Grade Road.

12. The ROW holder will provide adequate access to toilets with sufficient capacity to collect human waste for the estimated number of visitors. Visitors are expected to congregate at trailheads. At a minimum, one portable toilet should be available at one of the lower trailheads (either the Stock Rest, State Base, State Red Grade Springs) to reduce human waste impacts on BLM-administered surface. The ROW holder will ensure that the toilet is maintained and cleaned on an adequate basis to ensure visitors will utilize the toilet. Any vault toilets proposed on BLM-administered surface would be analyzed under a separate NEPA document.

7. Tribes, Individuals, Organizations, and Agencies Consulted

Sheridan Community Land Trust

Sheridan County

United States Forest Service

Bret Rhinesmith, Landowner

Mary Hopkins, Wyoming State Historic Preservation Officer

8. List of Preparers

Kerry Aggen	Geologist
Cindy Allen	Forester
Colin Betzler	Executive Director, SCLT
Tom Bills	Planning and Environmental Coordinator, BLM
Charlotte Darling	Rangeland Management Specialist, BLM
Chris Durham	Assistant Field Manager, BLM
Sara Evans-Kirol	Trails Program Coordinator, Bighorn National Forest
Allison Ginn	Outdoor Recreation Planner, BLM
Dustin Hill	Natural Resource Specialist, BLM
Arnie Irwin	Soil Scientist, BLM
Scott Jawors	Wildlife Biologist, BLM
Dustin Kavitz	Rangeland Management Specialist, BLM
Seth Lambert	Archeologist, BLM
Denise Oliverius	Realty Specialist, BLM
Bill Ostheimer	Supervisory Natural Resource Specialist, BLM
Chris Sheets	Wildlife Biologist, BLM
Brent Sobotka	Hydrologist, BLM
Jim Verplanke	Natural Resource Specialist, BLM
Jennifer Walker	Fire Ecologist, BLM
Rachel Woita	Outdoor Recreation Planner, BLM

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Appendix A: Issue Resolution

Subject	Summary Comment	Where / How Addressed
Cultural resources analysis	Commenters recommend a complete cultural resource study, including irrigation ditches, teepee circles, and other artifacts.	Complete cultural discussion in Sections 3.7 and 4.2.7. An intensive class III cultural resource inventory was performed as part of this analysis.
Historic roads	Commenter questioned why historic roads have been closed and if new trails will be a hindrance to use of stock drive and corral.	The only functional historic road administered by the BLM in the project area is Red Grade Road which is not closed. The historic Bighorn to Hyattville Road was replaced by the modern route of the Red Grade Road. The stock drive is Red Grade Road, and there will be no impacts to livestock use of the road or corral.
Incomplete sentences	Incomplete sentences offer suggestions, but are not clear in their meaning.	Document revised throughout to eliminate incomplete sentences and clarify meaning.
Trails as fuel breaks	Commenters assert that trails are not wide enough to serve as fuel breaks.	Added language to Sections 3.3 and 4.2.3 to describe the trails as 'hand lines' in the event of future wildfire.
Goshawk, leopard frog, boreal toad	Commenters recommend studying this area for the presence of goshawk, leopard frog, and boreal toad.	Added language to Section 3.4 to identify lack of known populations of leopard frog and boreal toad and lack of existing habitat on the project footprint itself. Surveys for goshawks were completed.
Migratory birds	A discussion of nesting birds in this area is necessary for effects determination.	Updated language in Section 4.2.4 to include effects and mitigation measures for nesting birds.
Wildlife disturbance	Commenters assert that wildlife will be disturbed and driven away (deer, elk, moose, mountain lion).	Updated language in Section 4.2.4 to include discussion of wildlife displacement.
Wildlife habitat and breeding	Commenters assert that wildlife habitat will be compromised and fragmented by trail development.	Updated language in Section 4.2.4 to acknowledge habitat fragmentation.
Downhill mountain biking safety	Commenters assert there will be increased injuries and necessary rescues from mountain biking accidents, increasing the environmental footprint from rescuers as well.	Alternative 3 eliminates the black diamond downhill-only bike trail. Also explained in the alternatives.
Emergency response plan	An emergency response plan is needed.	Addressed in Alternative 3; SCLT is working with local emergency agencies.

Subject	Summary Comment	Where / How Addressed
High risk activity use may be too much for the first responder community	Commenters suggest that with an increased use in high risk activities and resulting increased emergencies, ability to respond may be compromised.	Addressed in Alternative 3; SCLT is working with local emergency agencies.
Human safety analysis	The EA should include an analysis of public safety, and this analysis should be communicated to the public.	An emergency management plan has been developed, and this will be addressed with signage at trailhead.
Increased animal/human conflicts	Commenters assert that increased visitor use will result in increased animal/human conflicts. One commenter suggests creating only one trail, not more than 100 feet from Red Grade Road so that animals will have more undisturbed habitat. Another commenter suggests allowing users to carry side arms, stating that the area is frequented by mountain lions.	Updated language in Section 4.2.4 concerning undisturbed habitat and fragmentation. The public is already frequenting the area with no documented lion human predation and carrying firearms on public land is not prohibited.
Increased shooting	Commenters assert that with increased development and use, there will be increased shooting and safety issues.	Signs will list rules. SCLT has hired a Trails Manager to specifically oversee community engagement, safety, and a maintenance plan for the Red Grade Trails Project. (Section 2.3)
Increased traffic on Red Grade Rd	There will be increased traffic on Red Grade Road, which will impact safety and increase the amount of dust.	Alternatives 2 and 3 explain that parking area(s) will reduce traffic on Red Grade Road.
Law enforcement	Commenters assert a lack of law enforcement and a long response time when law enforcement is called.	SCLT has hired a Trails Manager to specifically oversee community engagement, safety, and a maintenance plan for the Red Grade Trails Project. (Section 2.3)
Liability	Commenters question who is liable if injuries occur, who will be the first responders, and who will pay.	Addressed in Alternative 3; SCLT is working with local emergency agencies. Addressing payment for emergency services is outside BLM authority.
Rockslides on steep terrain	Commenters assert that rockslides are frequent in the burn area and steep terrain, possibly increasing the risk to trail users and road traffic.	Address in Section 4.2.1; design of the trail system will reduce potential for rockslides.

Subject	Summary Comment	Where / How Addressed
Trail maps	Commenters suggest providing concise maps with trail numbers, difficulty level, land ownership, topology, satellite imagery, trail names and junction numbers, landlines, and lat/long tics.	Addressed in Section 2.3; signage will include area information, safety, and rules.
User conflicts	Commenters assert there will be user conflicts (hunters, bikers, horses, hikers), safety issues with multi-use trails, and the possibility of bikers on non-biking trails.	Addressed in Section 2.3; signage will include area information, safety, and rules.
Activities in parking lots	Commenters suggest prohibiting certain activities in parking lots: camping, fires, fireworks.	Addressed in Section 2.3; signage will include area information, safety, and rules.
Clarify roles and responsibilities SCLT, County, BLM	Commenters request clarification of the different agencies' roles and responsibilities.	Addressed in Section 1.6; this EA analyzes actions to be taken on BLM-administered surface only; BLM is responsible for the decision.
Cooperation of agencies	Commenters question likelihood of project completion; with several agencies involved, what happens if one says no?	Addressed in Sections 1.1 and 1.6; this EA analyzes actions to be taken on BLM-administered surface only; BLM is responsible for the decision.
Motorized use of non-motorized trails	Commenters suggest that motorized use may occur on non-motorized trails, resulting in noise pollution, soil erosion, and user conflicts.	Addressed in Section 2.3; signage will include area information, safety, and rules.
Need to bond the project	Commenters assert that SCLT may not have enough funding to complete the project and recommend that SCLT post a performance bond to provide funding for the future.	Explained in Alternatives 2 and 3. SCLT will raise sufficient funds prior to beginning any construction, ensuring that any work will not begin until enough money has been raised to complete each portion of the project.
Poaching	Commenter asserts that signage would not deter poaching.	Addressed in Alternative 3. SCLT is working with local law enforcement.
Trespassing	Who will patrol trails to prevent trespassing on private property? Law enforcement is already lacking in the area.	Addressed in Alternative 3. SCLT is working with local law enforcement. SCLT has hired a Trails Manager to specifically oversee community education, safety, and a maintenance plan for the Red Grade Trails Project. (Section 2.3).

Subject	Summary Comment	Where / How Addressed
Gates for pack stock	Commenters request 4-foot (or wider) gates to facilitate pack stock use.	Addressed in Section 2.2.3: added stipulation "Gates would be approximately 48 inches wide to allow equestrian access while preventing unauthorized OHV use of the trail system." Alternative 3 does not allow space for trailers in the Aspens Trailhead/Parking Area, preventing equestrian use.
Livestock grazing info/fencing and gate needs	Commenters recommend fencing to prevent livestock from entering steep areas and increasing erosion. Layout and gates should be designed to accommodate large numbers of cattle.	Sections 4.2.8 and 4.3.8 explain that drift fences may be constructed if conflicts arise, and that additional fencing will be considered if needed. Signage will indicate livestock use of the area. Conditions of Approval #6 includes signage instructions.
Cumulative impacts	There needs to be a lead agency to be in charge of the project and to address cumulative impacts, including increased use, possible future expansion, and connected actions.	Addressed in Sections 1.1 and 1.6; this EA analyzes actions to be taken on BLM-administered surface only; BLM is responsible for the decision. Possible future expansion would require additional analysis and would be conducted by the appropriate land management agency.
EIS needed	Commenters assert that EA is not adequate and that an EIS should be completed.	Adequate analysis was conducted, and this revised EA includes additional alternatives and analysis.
General NEPA items	NEPA documents should use the word "would" instead of "will" since they are pre-decisional documents.	Revised throughout where appropriate.
General NEPA items	The EA should include a list of persons/groups consulted as well as federal or other permits necessary for project implementation.	Included Section 7. Tribes, Individuals, Organizations, and Agencies Consulted
General NEPA items	Commenter suggests including a discussion of the authority under which the action is to be approved in Chapter 1.	Addressed in Section 1.5. Proposal conforms to Buffalo Field Office Resource Management Plan.
General NEPA items	Commenter suggests writing the Purpose and Need Statement for an external applicant driven action.	Revised Purpose and Need sections to include community focus.

Subject	Summary Comment	Where / How Addressed
General NEPA items - analysis	Commenter claims that the No Action Alternative is not adequately described, nor are its potential effects.	Addressed in Sections 2.1 and 4.1.
General NEPA items - analysis	Commenter suggests that analysis of environmental effects should cover construction, operation, and decommission, in that order.	Addressed in Section 4.2 and subsequent sections.
General NEPA items - cumulative effects	The Cumulative Effects section needs to align with Chapters 3 and 4 resource areas. Geographic and temporal boundaries should be established. Past, present, and future actions should be identified in the cumulative effects analysis.	Addressed in Cumulative Effects section for each alternative.
General NEPA items - document consistency	Commenter states that the Introduction discusses only BLM surface, but the EA covers the whole 34 miles of trails.	Cumulative effects include entire project (State, BLM, USFS) and the region; it is not specifically stated whether it only affects BLM or if it affects State, BLM, and USFS.
General NEPA items - document consistency	Affected Environment and Environmental Consequences sections need to be more aligned with each other.	Sections have been revised to ensure alignment.
General NEPA items - supporting documents	Commenter states that if the BLM is using other documents to inform EA analysis, then those documents should be made available to the public.	Section 9 includes the list of references (other documents) used in this EA. These documents are available upon request.
Government already made decision	Commenter asserts a lack of trust of the government and that public concerns will be ignored.	Addressed in Section 1.3; BLM listened to public concerns and prepared this revised EA with 2 additional alternatives.
Scope and extent of project	Commenters assert that project is too extensive and that the increase in disturbance and trails is an "overreach."	Addressed in Section 2.3; Alternatives 3 and 4 put forward plans with fewer trails and less disturbance
Separate agency reviews, independent utility	Commenters claim dividing project into separate NEPA reviews is prohibited by regulation (p.3) 40 CFR 1502.4; EA claims independent utility, but later states that actions are connected.	The EA is in compliance with NEPA and all federal regulations. The EA acknowledges and analyzes the full project area (State, BLM, USFS). A decision, not subject to NEPA, has already been made on the State portion and construction initiated. The USFS is not prepared to analyze and make a decision for their lands at this time. The decision is limited to BLM administered

Subject	Summary Comment	Where / How Addressed
		lands as that is the limit of BLM's authority.
Uncertainty in analysis process	Commenters claim uncertainty in how analysis was conducted and if all impacts were evaluated.	Section 4 thoroughly explains environmental effects of each alternative, and Section 5 explains the cumulative effects of each alternative.
Uncertainty in analysis process	Commenters recommend marking all proposed trails and conducting complete cultural and fauna/flora surveys.	Section 3 explains affected environment, including surveys of cultural and fauna/flora.
Develop different area instead	Commenters suggest using the hills east of town instead of developing this area, or develop trails at the top of Red Grade instead of at the bottom.	Addressed in Section 2.5; this alternative does not meet the purpose and need.
Inadequate alternatives	Commenters assert there should be more than two alternatives. Suggestions include no mountain biking, different amount of trails.	Section 2 includes two additional alternatives with varying amounts of trails. Trails that prohibit mountain biking do not meet the purpose and need of this EA.
Already sufficient trails	Commenters assert there are already enough trails (made by big game) and development in this area, and in the Bighorns.	Trails designed by professionals would reduce erosion (which can be an issue with trails made by big game). There are few maintained trails in this area.
Benefits and opportunities	Commenter recommends addressing the unique location of this site, so close to the largest population center in the county and the benefits and recreational opportunities it will provide.	Addressed in Sections 4.2.10 and 5; explains economic benefits of trail systems near communities.
Education opportunities	There are many environmental education opportunities with this project, especially with the Sheridan and Big Horn schools.	Not specifically addressed in this EA. Educational programs could be developed in the future.
Self-improvement opportunities	Another suggestion is to have exercise stations spread out along the trail.	Not specifically addressed in this EA. Exercise stations are not appropriate in this proposal since this is a mostly natural landscape.
Make all new trails multi-use	Commenters suggest that there are not a lot of biking only trails, so these trails should all be multi-use with signs posting the rules.	Addressed in Section 2.3; signage will include area information, safety, and rules. Separating trails by use is safer.

Subject	Summary Comment	Where / How Addressed
No overnight camping	Commenters suggest no overnight camping be allowed.	Addressed in Section 2.3; signage will include area information, safety, and rules.
Races and events	Commenters suggest prohibiting races and events.	Not specifically addressed in this EA, but races and events cannot be prohibited in a recreation area. Any race and event proposal would be subject to a NEPA analysis to assess their environmental effects and appropriateness.
Seasonality of use	Commenters suggest leaving trails open all year and question going up a down trail in winter (with no bicycles present).	Addressed in Section 2.3; signage will include area information, safety, and rules. Winter use is not prohibited.
Signage	Commenters suggest posting signs at trailheads, parking lots, gates, etc. to promote safety and good trail etiquette and prevent user conflicts.	Addressed in Section 2.3; signage will include area information, safety, and rules.
Stock rest conflict	Commenters assert that increased parking areas will eliminate safe areas for overnight stock rest and will increase user conflicts.	Alternative 3 does not include the Stock Rest parking area and Alternative 4 included no additional trailheads. If Alternative 2 is selected, the design would minimize user conflicts as described in Sections 4.2.8 and 4.3.8 and Condition of Approval #5.
Inadequate evaluation	Commenter claims that EA is too limited in its evaluation of user types.	EA includes several user types. Trails are to be mainly used by hikers and mountain bikers, and were analyzed for these most common uses. Other non-motorized uses are not prohibited.
Inappropriate comparison to Mosier Gulch Trail	Commenters assert that the Mosier Gulch Trail comparison is inappropriate: single-use vs. multi-use trail, steepness of terrain, difficulty of trails, view shed.	Section 1.3 includes comparison to Mountain of the Rogue Trail System in Oregon. This comparison is appropriate.
Scoping	Commenters question if internal and external scoping were conducted adequately. Many felt there was a lack of information provided to the public.	Addressed in Section 1.5; explained outreach actions, public scoping meetings, and public comment period. This revised EA addresses the public comments received during public review of the 2015 EA.
Socioeconomics	Socioeconomics effects need to be included in analysis.	Added Section 4.2.10 and included in Cumulative Effects section.

Subject	Summary Comment	Where / How Addressed
Erosion	Commenters assert there will be increased erosion from the new trails and increased use.	Trails would be designed by IMBA using best practices for trail design. These techniques are sustainable and minimize erosion.
Trail maintenance	Trail maintenance is already lacking in USFS areas, so how will additional trails be maintained? Who will be responsible?	SCLT has hired a Trails Manager to specifically oversee community engagement, safety, and a maintenance plan for the Red Grade Trails Project. (Section 2.3)
Trail rehabilitation	Commenter questions rehabilitating trails that were once game trails. If the goal is to make the area more natural, why rehabilitate trails made by game animals?	Trails designed by professionals would reduce erosion (which can be an issue with trails made by big game).
Eliminate parking areas	Commenters suggest eliminating specific parking lots (Aspens, Stock Rest), enforce no parking anywhere else, and do not create any new parking lots.	Alternative 3 includes only one parking lot; Stock Rest parking area has been removed. Alternative 4 does not include any parking lots.
Parking clarifications	Please explain why boulders would be placed at the Aspens parking lot and a fence at other lots.	The Aspens Trailhead / Parking Area will be delineated by a buck-and-pole fence.
Parking for equestrians	Commenters urge the need for a parking lot large enough to accommodate horse trailers.	The Stock Rest Parking Area in Alternative 2 would be large enough to accommodate horse trailers. The Stock Rest Trailhead/Parking Area has been removed from Alternatives 3 and 4.
Provide parking lot details	Commenters request details regarding size, design, and construction of parking lots.	The SCLT proposal includes a detailed description and maps of the trailheads / parking areas (Alternatives 2 and 3).
Aspen groves	Commenters state that aspens are rare in the Bighorns, and development in areas where they grow should be avoided.	Known aspen within the project area are uncommon, although thinning of conifer that may occur along the trail system may facilitate hydrologic/canopy release which would facilitate aspen suckering/regeneration.
Invasive plants	More information is needed on how the SCLT plans to control/prevent the spread of invasive weeds.	This was addressed in the mitigation section of the EA. It is a requirement of SCLT and the ROW holder to control weeds in the area.
Invasive plants spread by construction	Care should be taken to prevent the introduction and spread of invasive plants by construction activities.	Added language in the mitigation section of the EA requiring all construction equipment entering the area to be washed and cleaned.

Subject	Summary Comment	Where / How Addressed
Limber pine	Commenter states that EA contradicts itself on whether limber pine will be removed and suggests clarification. If any limber pines will be removed, indicate the number.	Healthy limber pine would be identified as key trees and would be retained as described on page 3 of 'A revised project proposal by the Sheridan Community Land Trust', Jan. 22, 2016. Comments have been made to include this in the proposed actions. Language in Sections 3.3, 4.2.3, and 4.3.3 has been updated.
Pollinators and plants	There is no mention of plant communities and pollinators that will be affected by the project.	Major impacts are not anticipated to occur, also thinning of dense conifer stands may reduce canopy competition allowing forest floor plants to establish which would allow possibility for flowering plants to establish in those areas.
Sensitive plants	Commenters assert there may be sensitive plants affected by this project, including the mountain lady's slipper and the William's wafer parsnip.	Added habitat info to 3.3: For mountain lady slipper and William's wafer parsnip. Wafer parsnip is unlikely to occur in this area. Sections 4.2.3 and 4.3.3: BLM will survey the approved proposed trail system for sensitive species where it intersects BLM-listed sensitive plant habitat. Surveys for mountain lady's slipper will be completed as time and priorities permit. Where possible, the trail will be re-routed to avoid occupied habitat. If this is not possible, the limited surface disturbance proposed by the project is not likely to have a significant impact on any populations present. Added survey requirement to Condition of Approval #8.

Subject	Summary Comment	Where / How Addressed
Stress on plants	Commenter claims that numerous trails will increase erosion and stress on already weakened trees (from pine bark beetle).	The erosion component of this comment is addressed in several sections of the EA, particularly in section 2.2.2 Trail Design Components, and in section 4 alternative analyses for Effects of Alternative x on Soils/Ecological Site/Vegetation, all of which have been updated. The bark beetle aspect of this comment is addressed in the EA in terms of improvement to forest health from reduction in understory growth along the trails; see section 4 alternative analyses under Effects of Alternative x on Forestry, Fuels, and Sensitive Plant Species. Bark beetle issues tend to worsen in areas with dense forest growth because the trees are competing for resources.
Tree removal	Commenter asserts that area is already disturbed from fire and that tree removal will scar it more.	Language was added to Section 3.3 to indicate the burned area has re-vegetated with herbaceous and deciduous shrubs.
Weeds from horses	Commenters suggested requiring weed-free hay for horses.	Identified the requirement for weed free hay in the mitigation section (all federal lands).
Can't meet Visual 2	Commenters assert that the increase in trails be too much disturbance to meet VRM class II.	Addressed in Section 4.2.6; trail design would screen the trail from key observation points using natural topography and following contours wherever possible.
Human waste	Commenters assert there will be increased human waste in parking lots and along trails, and that there will be nowhere to go to the bathroom. If a bathroom is provided, who will pay and be responsible for maintenance?	The conditions of Approval require that the ROW holder will provide adequate access to toilets with sufficient capacity to collect human waste for the estimated number of visitors. In particular this means a vault toilet at the Aspens Trailhead/Parking Area during peak seasons.

Subject	Summary Comment	Where / How Addressed
Pets	Commenters suggest requiring pet waste be packed out and that pets be on leashes at all times.	Addressed in Section 2.3; signage will include area information, safety, and rules.
Trash	Commenters assert there will be increased trash in parking lots and along trails. Who will pick up the trash? Who will pay?	Signage will address this, and the SCLT Trails Manager will monitor this, educate the public, and make suggestions if changes need to be made (e.g., place trash receptacles at trailhead).
Drinking water at the homes	Commenters claim that drinking water will be negatively affected by the increased use of the area and question who will pay for testing the water.	Distance from permitted water sources, existing vegetation conditions, and proposed Best Management Practices make the likelihood of impacts to drinking water highly unlikely. Therefore, water testing would be the responsibility of the water right owner.
Maintain water quality	Commenters assert the need for a baseline water quality assessment and New Source Performance Standards (NSPS) to maintain water quality.	There will be no direct impacts to water resources as part of the Federal action. Therefore, a water quality assessment would be inappropriate. NSPS only applies to industrial wastewater discharges which will not be present on this project.
Water quality impacts/ hydrology survey needed	Commenter suggests there are data gaps and that a hydrology survey is necessary.	The data necessary to assess the water resources in the area are available from the State Engineers Office. These were thoroughly consulted in the preparation of the EA.
Analysis of effects of construction methods	Commenters suggest that the steepness of the terrain will preclude using only hand tools for construction and urges BLM to analyze the effects (air, noise, etc.) of machines for construction.	Section 1.7 states that construction will be completed largely by hand tools. This method was analyzed when the trails were designed, and deemed to be most appropriate.

Appendix B: Summary of species habitat and project effects for the Red Grade Trail Project

Summary of threatened and endangered species habitat and project effects

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
<i>Threatened</i>				
Ute ladies'-tresses orchid	Riparian areas with permanent water	NP	NE	Habitat not present
<i>Proposed</i>				
Northern Long-eared Bat	Conifer and deciduous forest, caves and mines	NP	NE	The project area is outside the species' range, and the species is not expected to occur. Only known to occur in extreme Northeast WY (mainly Crook and Weston counties, very limited in northern Campbell county).
<i>Candidate</i>				
Greater Sage-grouse	Basin-prairie shrub, mountain-foothill shrub	NP	NE	Habitat not present
<p>Presence NP - Habitat not present and species unlikely to occur within the project area</p> <p>Project Effects LAA - Likely to adversely affect NE - No effect NLAA - May affect, not likely to adversely affect individuals or habitat NLJ – Not likely to jeopardize the continued existence of the species MIH – May impact individuals and habitat NP - Habitat not present and species unlikely to occur within the project area</p>				

Summary of sensitive species habitat and project effects

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
<i>Amphibians</i>				
Northern leopard frog (<i>Rana pipiens</i>)	Beaver ponds and cattail marshes from plains to montane zones	S	MIH	Habitat would be avoided.
Columbia spotted frog (<i>Rana pretiosa</i>)	Ponds, sloughs, small streams, and cattails in foothills and montane zones; confined to headwaters of the S Tongue River drainage and tributaries	NP	NI	The project area is outside the species' range, and the species is not expected to occur.
<i>Fish</i>				
Yellowstone cutthroat trout (<i>Oncorhynchus clarki bouvieri</i>)	Cold-water rivers, creeks, beaver ponds, and large lakes in the Upper Tongue sub-watershed	NP	NI	The project area is outside the species' range, and the species is not expected to occur.
<i>Birds</i>				
Plains Sharp-tailed Grouse (<i>Tympanuchus phasianellus</i>)	Savannah style prairie with grasses dominant and shrub patches mixed throughout, with minimal patches of trees. Selection of these specific habitats depends on the quality of habitat available to grouse.	S	MIH	Some habitat present adjacent to project location, although impacts would be negligible.
Baird's sparrow (<i>Ammodramus bairdii</i>)	Shortgrass prairie and basin-prairie shrubland habitats; plowed and stubble fields; grazed pastures; dry lakebeds; and other sparse, bare, dry ground	S	MIH	There have been no records of Baird's Sparrows nesting in Campbell County. Migrants may be impacted by dust, noise, human activities, or habitat loss.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Mature forest cover often within one mile of large water body with reliable prey source nearby	NP	NI	Migratory bird surveys and incidental observations have not identified any nests or roosts.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Brewer's sparrow (<i>Spizella breweri</i>)	Sagebrush shrubland	S	MIH	A timing limitation would protect active nests from destruction during the nesting season. Nesting and foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area.
Ferruginous hawk (<i>Buteo regalis</i>)	Basin-prairie shrub, grasslands, rock outcrops	NP	NI	Habitat not present
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Basin-prairie shrub, mountain-foothill shrub	NS	NI	Some habitat present adjacent to project location
Long-billed curlew (<i>Numenius americanus</i>)	Grasslands, plains, foothills, wet meadows	NP	NI	Habitat not present
Mountain Plover	Short-grass prairie with slopes < 5%	NP	NI	Habitat not present
Northern goshawk (<i>Accipiter gentilis</i>)	Conifer and deciduous forests	S	MI	A timing limitation would protect active nests from destruction during the nesting season. Nesting and foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area.
Peregrine falcon (<i>Falco peregrinus</i>)	Cliffs	NP	NI	Habitat not present
Sage sparrow (<i>Amphispiza billneata</i>)	Basin-prairie shrub, mountain-foothill shrub	NP	NI	Species not present
Sage thrasher (<i>Oreoscoptes montanus</i>)	Basin-prairie shrub, mountain-foothill shrub	S	MIH	Foraging individuals may be impacted by dust, noise, human activities, or habitat loss
Trumpeter swan (<i>Cygnus buccinator</i>)	Lakes, ponds, rivers	NP	NI	Habitat not present
Western Burrowing owl (<i>Athene cunicularia</i>)	Grasslands, basin-prairie shrub	NP	NI	Habitat not present

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
White-faced ibis (<i>Plegadis chihi</i>)	Marshes, wet meadows	NP	NI	Habitat not present
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Open woodlands, streamside willow and alder groves	NP	NI	Habitat not present.
Mammals				
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	Prairie habitats with deep, firm soils and slopes less than 10 degrees	NP	NI	Habitat not present.
Fringed myotis (<i>Myotis thysanodes</i>)	Conifer forests, woodland chaparral, caves and mines	S	MIH	Foraging individuals may be impacted by dust, noise, human activities, or habitat loss
Long-eared myotis (<i>Myotis evotis</i>)	Conifer and deciduous forest, caves and mines	S	MIH	Foraging individuals may be impacted by dust, noise, human activities, or habitat loss
Swift fox (<i>Vulpes velox</i>)	Grasslands	NP	NI	Habitat not present
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	Caves and mines	NP	NI	Habitat not present
<i>Big Game</i>	Basin-prairie, mountain-foothill, woodlands, and riparian habitats	K	MIH	Not a designated parturition area or crucial winter range. Foraging individuals within seasonal habitats may be impacted by dust, noise, human activities, or habitat loss.
Plants				
Limber Pine (<i>Pinus flexilis</i>)	Mountains, associated with high elevation conifer species	P	MIH	Would be avoided
Porter's sagebrush (<i>Artemisia porteri</i>)	Sparsely vegetated badlands of ashy or tufaceous mudstone and clay slopes 5300-6500 ft	NP	NI	Habitat not present

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
William's wafer parsnip (<i>Cymopterus williamsii</i>)	Open ridge tops and upper slopes with exposed limestone outcrops or rockslides, 6000-8300 ft	S	MIIH	Would be avoided
<p>Presence K - Known, documented observation within project area S - Habitat suitable and species suspected, to occur within the project area NS - Habitat suitable but species is not suspected to occur within the project area NP - Habitat not present and species unlikely to occur within the project area</p> <p>Project Effects NI - No impact MIIH - May impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or a loss of viability to the population or species WIPV - Will impact individuals or habitat with a consequence that the action may contribute to a trend towards Federal listing or cause a loss of viability to the population or species BI - Beneficial Impact</p>				